STN 11/9/95

```
=> s (multianalyte or microspot# or capture probe# or capture binding or
binding pair#)

         10   FILE AIDSLINE
         14   FILE ANABSTR
         20   FILE BIOBUSINESS
         72   FILE BIOSIS
         99   FILE BIOTECHABS
         99   FILE BIOTECHDS
         16   FILE CABA
         10   FILE CANCERLIT
        354   FILE CAPLUS
         27   FILE CEABA
          1   FILE CEN
          1   FILE CIN
         49   FILE CJACS
         11   FILE CJELSEVIER
  15 FILES SEARCHED...
          6   FILE CONFSCI
          8   FILE DISSABS
          1   FILE DRUGU
          4   FILE EMBAL
         73   FILE EMBASE
          8   FILE FSTA
         93   FILE GENBANK
        250   FILE IFIPAT
  29 FILES SEARCHED...
          6   FILE JICST-EPLUS
         31   FILE LIFESCI
         63   FILE MEDLINE
         10   FILE NTIS
          1   FILE PHIC
  36 FILES SEARCHED...
         11   FILE PHIN
         23   FILE PROMT
        111   FILE SCISEARCH
         16   FILE TOXLINE
         76   FILE TOXLIT
        739   FILE USPATFULL
  42 FILES SEARCHED...
         31   FILE NLDB
          3   FILE PNI
         74   FILE INPADOC
         79   FILE JAPIO
          4   FILE PAPERCHEM2
        108   FILE PATOSEP
         72   FILE PATOSWO
          6   FILE PIRA
          2   FILE RAPRA
        333   FILE WPIDS
  58 FILES SEARCHED...
        333   FILE WPINDEX

  44 FILES HAVE ONE OR MORE ANSWERS,   59 FILES SEARCHED IN STNINDEX

L1   QUE (MULTIANALYTE OR MICROSPOT# OR CAPTURE PROBE# OR CAPTURE BINDING
       OR BINDING PAIR#)
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=> d rank

F1          739   USPATFULL
F2          354   CAPLUS
F3          333   WPIDS
F4          333   WPINDEX
F5          250   IFIPAT
F6          111   SCISEARCH
F7          108   PATOSEP
F8           99   BIOTECHABS
F9           99   BIOTECHDS
F10          93   GENBANK
F11          79   JAPIO
F12          76   TOXLIT
F13          74   INPADOC
F14          73   EMBASE
F15          72   BIOSIS
F16          72   PATOSWO
F17          63   MEDLINE
F18          49   CJACS
F19          31   LIFESCI
F20          31   NLDB
F21          27   CEABA
F22          23   PROMT
F23          20   BIOBUSINESS
F24          16   CABA
F25          16   TOXLINE
F26          14   ANABSTR
F27          11   CJELSEVIER
F28          11   PHIN
F29          10   AIDSLINE
F30          10   CANCERLIT
F31          10   NTIS
F32           8   DISSABS
F33           8   FSTA
F34           6   CONFSCI
F35           6   JICST-EPLUS
F36           6   PIRA
F37           4   EMBAL
F38           4   PAPERCHEM2
F39           3   PNI
F40           2   RAPRA
F41           1   CEN
F42           1   CIN
F43           1   DRUGU
F44           1   PHIC

=> file f1-f44
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TOTAL FOR ALL FILES
L44 2926 (MULTIANALYTE OR MICROSPOT# OR CAPTURE PROBE# OR CAPTURE B
INDING OR BINDING PAIR#)

=> s l44 and (microsphere#)

L45 46 FILE USPATFULL
L46 5 FILE CAPLUS
L47 4 FILE WPIDS
L48 2 FILE IFIPAT
L49 0 FILE SCISEARCH
L50 1 FILE PATOSEP
L51 2 FILE BIOTECHDS
L52 0 FILE GENBANK
L53 0 FILE JAPIO
L54 1 FILE TOXLIT
L55 0 FILE INPADOC
L56 0 FILE EMBASE
L57 0 FILE BIOSIS
L58 1 FILE PATOSWO
L59 3 FILE MEDLINE
L60 3 FILE CJACS
L61 0 FILE LIFESCI
L62 0 FILE NLDB
L63 0 FILE CEABA
L64 0 FILE PROMT
L65 1 FILE BIOBUSINESS
L66 0 FILE CABA
L67 0 FILE TOXLINE
L68 0 FILE ANABSTR
L69 1 FILE CJELSEVIER
L70 0 FILE PHIN
L71 1 FILE AIDSLINE
L72 0 FILE CANCERLIT
L73 0 FILE NTIS
L74 0 FILE DISSABS
L75 0 FILE FSTA
L76 0 FILE CONFSCI
L77 1 FILE JICST-EPLUS
L78 0 FILE PIRA
L79 0 FILE EMBAL
L80 0 FILE PAPERCHEM2
L81 0 FILE PNI
L82 0 FILE RAPRA
L83 0 FILE CEN
L84 0 FILE CIN
L85 0 FILE DRUGU
L86 0 FILE PHIC

TOTAL FOR ALL FILES
L87 72 L44 AND (MICROSPHERE#)

=> duplicate remove l87

Cleveland, Ohio 44195

L88 ANSWER 2 OF 64 USPATFULL DUPLICATE 1
AN 95:20648 USPATFULL
TI Membrane-based immunoassay method
IN Lambotte, Paul P., San Diego, CA, United States
Darter, Robert C., San Diego, CA, United States
Sarno, Mark J., Escondido, CA, United States
PA Hybritech Incorporated, San Diego, CA, United States (U.S. corporation)
PI US 5395754 950307
AI US 92-923339 920731 (7)
DT Utility
EXNAM Primary Examiner: Spiegel, Carol A.
LREP Pochopien, Donald J.; Steinhardt, Paul C.
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1337
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to a membrane-based immunoassay method for an analyte of interest having at least two sterically separate antigenic sites. The method comprises providing a reactive membrane having a calibration zone and a test zone, wherein the calibration zone is characterized by having a predetermined amount of the analyte of interest immobilized via a first antibody as a first specific ***binding*** ***pair*** to a solid phase, the immobilized first ***binding*** ***pair*** being covalently cross-linked such that any remaining binding sites on said first immobilized antibody are substantially incapable of further specifically binding to any additional analyte, but at least some of said analyte is capable of specifically binding to a preselected amount of a labelled second antibody. The method further includes the steps of contacting the reactive membrane with a predetermined amount of sample and allowing any analyte in the test sample to become specifically bound to immobilized first antibody in the test zone; contacting the immobilized analyte in the test and calibrator zones with a labelled second antibody capable of binding to a second antigen site on the immobilized analyte; and determining the presence or amount of analyte in the test sample by comparing the amount of labelled second antibody specifically bound in the test zone versus the amount of labelled second antibody specifically bound in the calibration zone.

L88 ANSWER 3 OF 64 USPATFULL
AN 95:78110 USPATFULL
TI Magnetically assisted binding assays using magnetically labeled binding members
IN Rohr, Thomas E., Gurnee, IL, United States
PA Abbott Laboratories, Abbott Park, IL, United States (U.S. corporation)
PI US 5445971 950829
AI US 94-348780 941201 (8)
RLI Continuation of Ser. No. US 93-161376, filed on 2 Dec 1993, now abandoned which is a continuation-in-part of Ser. No. US 92-854151, filed on 20 Mar 1992, now abandoned
DT Utility
EXNAM Primary Examiner: Scheiner, Toni R.; Assistant Examiner: Wolski, Susan C.
LREP Bach, Mark C.
CLMN Number of Claims: 2
ECL Exemplary Claim: 1
DRWN 25 Drawing Figure(s); 12 Drawing Page(s)
LN.CNT 1755
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides devices for performing binding assays. Such devices comprise (i) a reaction vessel where unbound and immobilized magnetically-labeled reagent are produced in relation to the amount of said analyte in said test sample; (ii) a separation means for partitioning said immobilized magnetically-labeled reagent and said bound magnetically-labeled reagent; (iii) a magnetic field generator means for the application of a magnetic field to said magnetically-labeled reagent; and (iv) a measurement means to assess the effect of said magnetic field on said magnetically-labeled reagent as a measure of the presence or amount of said analyte in said test sample. The device provided by the instant invention can run, for example, direct indirect, competitive, inhibition and sandwich assay formats.

L88 ANSWER 4 OF 64 USPATFULL
AN 95:78109 USPATFULL
TI Magnetically assisted binding assays using magnetically labeled binding members
IN Rohr, Thomas E., Ferndale, IL, United States
PA Abbott Laboratories, Abbott Park, IL, United States (U.S. corporation)
PI US 5445970 950829
AI US 94-348503 941201 (8)
RLI Continuation of Ser. No. US 93-161105, filed on 2 Dec 1993, now abandoned which is a continuation-in-part of Ser. No. US 92-854151, filed on 20 Mar 1992, now abandoned
DT Utility
EXNAM Primary Examiner: Scheiner, Toni R.; Assistant Examiner: Wolski, Susan C.
LREP Bach, Mark C.
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 25 Drawing Figure(s); 12 Drawing Page(s)
LN.CNT 1802
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides assay methods for performing binding assays, wherein the detectable label is a magnetically responsive material. Direct and indirect, competitive and sandwich assay formats are used to partition the magnetically attractable label between a solid phase and a fluid phase in proportion to the presence or amount of analyte in the test sample. The magnetic responsiveness of the magnetically attractable label in one or both phases results in the exertion of a force upon the label. By determining the extent of the force or influence of the force exerted upon the label, the amount of the analyte in the test sample is determined.

N 95:9617 USPATFULL
TI Methods for detection and quantification of cell subsets within subpopulations of a mixed cell population
IN Melnicoff, Meryle J., Cherry Hill, NJ, United States
Jensen, Bruce D., Schwenksville, PA, United States
Muirhead, Katharine A., West Chester, PA, United States
Horan, Paul K., Downingtown, PA, United States
Summers, Martin D., West Chester, PA, United States
Wong, William, Chadsford, PA, United States
PA Zynaxis, Inc., Malvern, PA, United States (U.S. corporation)
PI US 5385822 950131
AI US 90-619838 901129 (7)
RLI Continuation-in-part of Ser. No. US 89-345436, filed on 1 May 1989, now patented, Pat. No. US 5256532 which is a continuation-in-part of Ser. No. US 88-189192, filed on 2 May 1988, now abandoned
DT Utility
EXNAM Primary Examiner: Kepplinger, Esther M.; Assistant Examiner: Wolski, Susan C.
LREP Dann, Dorfman, Herrell and Skillman
CLMN Number of Claims: 70
ECL Exemplary Claim: 34
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1599
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The presence or quantity of a selected subset of cells, which is part of a subpopulation of a mixed cell population, is determined by a method in which a detectable reporter substance is uniformly incorporated into substantially all cells of the subpopulation containing the subset of interest. The subset of interest is then affinity-separated by incubating a test sample of the mixed cell population containing the labeled subpopulation with a specific binding substance which selectively binds to characteristic determinants of the cell subset of interest. Occurrence of the reporter substance in the separated fraction is then detected, and correlated to a predetermined standard to determine the presence or quantity of the subset of interest within the cell population. According to another aspect of the invention a method is provided for quantitating two or more selected subsets of cells within a subpopulation of a mixed cell population. After labeling, the entire subpopulation is affinity-separated from the mixed cell population, and occurrence of the reporter substance in the separated fraction is detected. Next, subsets of interest within the subpopulation are affinity-separated as described above, and the level of detected reporter substance in each subset is compared to the level detected in the entire subpopulation. According to further aspects of the invention test kits are provided for performing the above-described methods.

L88 A

L88 ANSWER 11 OF 64 USPATFULL
AN 94:104507 USPATFULL
TI Simultaneous multiple assays
IN Hansen, W. Peter, New York, NY, United States
PA Sienna Biotech, Inc., New York, NY, United States (U.S. corporation)
PI US 5369037 941129
AI US 93-113327 930830 (8)
RLI Division of Ser. No. US 92-883574, filed on 15 May 1992, now patented, Pat. No. US 5286452 which is a continuation-in-part of Ser. No. US 91-702302, filed on 20 May 1991, now abandoned
DT Utility
EXNAM Primary Examiner: Housel, James C.; Assistant Examiner: Le, Long V.
LREP Lerner, David, Littenberg, Krumholz & Mentlik
CLMN Number of Claims: 52
ECL Exemplary Claim: 1
DRWN 24 Drawing Figure(s); 18 Drawing Page(s)
LN.CNT 1196
AB A particle agglutination-based, stable kinetic method for simultaneously determining the concentrations of multiple analytes in a single fluid sample with the addition of a single reagent, that entails the use of a novel high resolution sheath flow cell, a novel optical flow particle analyzer (FPA), and unidirectional low angle forward light scattering from multiply-sized or refractive indexed, differently coated particles and their aggregates.

ANSWER 14 OF 64 USPATFULL
AN 94:13252 USPATFULL
TI Simultaneous multiple assays
IN Hansen, W. Peter, New York, NY, United States
PA Sienna Biotech, Inc., New York, NY, United States (U.S. corporation)
PI US 5286452 940215
AI US 92-883574 920515 (7)
RLI Continuation-in-part of Ser. No. US 91-702302, filed on 20 May 1991, now abandoned
DT Utility
EXNAM Primary Examiner: Housel, James C.; Assistant Examiner: Le, Long V.
LREP Rothwell, Figg, Ernst & Kurz
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 26 Drawing Figure(s); 18 Drawing Page(s)
LN.CNT 1083
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A particle agglutination-based, stable kinetic method for simultaneously determining the concentrations of multiple analytes in a single fluid sample with the addition of a single reagent, that entails the use of a novel high resolution sheath flow cell, a novel optical flow particle analyzer (FPA), and unidirectional low angle forward light scattering from multiply-sized or refractive indexed, differently coated particles and their aggregates. Also disclosed are two embodiments of an instrument specifically designed to carry out the method of the invention.

L88 ANSWER 15 OF 64 USPATFULL
AN 94:9512 USPATFULL
TI Homogenous protection assay
IN Arnold, Jr., Lyle J., San Diego, CA, United States
Nelson, Norman C., San Diego, CA, United States
PA Gen-Probe, Incorporated, San Diego, CA, United States (U.S. corporation)
PI US 5283174 940201
AI US 90-613603 901108 (7)
RLI Continuation of Ser. No. US 88-294700, filed on 12 Dec 1988, now abandoned And a continuation of Ser. No. US 90-528920, filed on 23 May 1990, now abandoned , said Ser. No. US 88-294700, filed on 12 Dec 1988, now abandoned which is a continuation-in-part of Ser. No. US 87-99392, filed on 21 Sep 1987, now abandoned , said Ser. No. US 90-528920, filed on 23 May 1990, now abandoned which is a continuation of Ser. No. US 87-99392, filed on 21 Sep 1987, now abandoned
DT Utility
EXNAM Primary Examiner: Wax, Robert A.; Assistant Examiner: Kim, Hyosuk
LREP Lyon & Lyon
CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 1248
AB Improved homogenous diagnostic assay methods and labels for detecting an analyte in a medium when the analyte is a member of a specific ***binding*** ***pair*** . The methods and labels provide procedures for reducing background and increasing sensitivity. The binding partner of the analyte is labeled with a

substance, the stability of which detectably changes whenever said analyte is bound as a member of the specific ***binding*** ***pair*** . In a closely related system, the analyte is labeled with a substance susceptible to differential degradation depending on whether or not the analyte is bound as a member of its specific ***binding*** ***pair*** . After incubation and selective degradation or chemical or biochemical alteration, the amount of analyte bound is detected by measuring either the stability change or the extent of degradation of the label. In a particular system, chemiluminescent acridinium ester labeled probes are used in a homogenous hybridization assay format for sensitively detecting the presence of complement any target polynucleotide sequences.

L88 ANSWER 17 OF 64 CAPLUS COPYRIGHT 1995 ACS DUPLICATE 2
AN 1993:444689 CAPLUS
DN 119:44689
TI Immunoassay or binding assay employing a ***capture*** ***binding*** agent and a developing binding agent conjugated to fluorescent dye-containing ***microspheres***
IN Ekins, Roger Philip; Chu, Frederick Woodnam
PA Multilyte Ltd., UK
SO PCT Int. Appl., 47 pp.
CODEN: PIXXD2
PI WO 9308472 A1 930429
DS W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, UA, US
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG
AI WO 92-GB1892 921015
PRAI GB 91-21873 911015
GB 92-21094 921007
DT Patent
LA English
AB A high-sensitivity binding assay for an analyte, in which process a ***capture*** ***binding*** agent having binding sites specific for the analyte and a developing binding material capable of binding with the bound analyte or with the binding sites on the ***capture*** ***binding*** agent occupied by the bound analyte or with the binding sites remaining unoccupied on the ***capture*** ***binding*** agent are used, employs the ***capture*** ***binding*** agent in an amt. such that only an insignificant fraction of the analyte in the sample becomes bound to the ***capture*** ***binding*** agent, the ***capture*** ***binding*** agent preferably being present at high surface d. on ***microspots*** . A label is used in the assay in relation to the developing binding material, the label being provided by ***microspheres*** having a size of less than 5 .mu.m and carrying a marker, preferably fluorescent dye mols. contained within the ***microspheres*** . Thus, an ultrasensitive sandwich 2-step back-titrn. TSH ***microspot*** immunoassay involves: (1) spotting polystyrene microtiter wells with .ltoreq.1 .mu.L monoclonal anti-TSH capture antibody, aspirating the antibody droplets, blocking the wells with bovine serum albumin, washing, adding 200 .mu.L sample to each well, and shaking the plate at room temp. for a given time (30 min to several h) and (2) adding 200 .mu.L developing binding material antibody conjugated to fluorescent dye-contg. latex ***microspheres*** (diam. 0.1 .mu.m), to each well, shaking the plate at room temp. for 0.5-1 h, washing, aspirating until completely dry, and scanning with an MRC-600 Laser Scanning Confocal Microscope. A binding assay for DNA using single-stranded oligonucleotide DNA probe (***capture*** ***binding*** agent) and an antibody recognizing only twin-stranded DNA sequence or other developing binding material also is described.

L88 ANSWER 18 OF 64 USPATFULL
AN 93:89540 USPATFULL
TI Methods, reagents and test kits for determination of subpopulations of biological entities
IN Melnicoff, Meryle J., Cherry Hill, NJ, United States
Muirhead, Katharine A., West Chester, PA, United States

Horan, Paul K., Downingtown, PA, United States
PA Zynaxis Technologies, Inc., Malvern, PA, United States (U.S. corporation)
PI US 5256532 931026
AI US 89-345436 890501 (7)
RLI Continuation-in-part of Ser. No. US 88-189192, filed on 2 May 1988, now abandoned
DT Utility
EXNAM Primary Examiner: Kepplinger, Esther L.; Assistant Examiner: Spiegel, Carol A.
LREP Dann, Dorfman, Herrell and Skillman
CLMN Number of Claims: 49
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1478
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Analytes, having a characteristic determinant that selectively interacts with a specific binding substance, are determined by coupling a reporter substance to the analyte, or to the specific binding substance, causing complex formation between the analyte and the specific binding substance in a test medium, separating the complexes thus formed from the test medium, and determining the presence or quantity of the analyte of interest by detecting the occurrence of the reporter substance in the complexes or the separated test medium. The determination is preferably performed on biomembrane-containing entities, such as cell subpopulations and/or subsets thereof, the reporter substance being stably associated with the lipid component of the biomembrane. Reagents and test kits are disclosed for performing the analyte determination.

L88 ANSWER 19 OF 64 CAPLUS COPYRIGHT 1995 ACS
AN 1993:142986 CAPLUS
DN 118:142986
TI Methods and compositions for simultaneous analysis of multiple analytes, especially with flow cytometry
IN Lehnen, Brian C.; Crothers, Stephan D.
PA Transmed Biotech Inc., USA
SO PCT Int. Appl., 70 pp.
CODEN: PIXXD2
PI WO 9302360 A1 930204
DS W: AU, CA, JP, NO, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE
AI WO 92-US5799 920710
PRAI US 91-731039 910716
DT Patent
LA English
AB A method is disclosed for detection of multiple analytes in a sample employing a complementary binding moiety to each of the analytes bound to a solid support, wherein each analyte and its complementary binding moiety comprise 1st and 2nd members of a specific ***binding*** ***pair*** . The method includes (1) forming a mixt. of known proportions of multiple subpopulations of the complementary binding moieties, in which each subpopulation comprises a different complementary binding moiety; (2) contacting the sample with the mixt. so that specific ***binding*** ***pairs*** are formed on the solid supports; and (3) relating the presence of analytes in the sample to the formation of specific

binding ***pairs*** assocd. with each unique proportion of multiple subpopulations by comparing the area of the peak in the fluorescence histogram to the total area of peaks in the histogram. The method can be performed with solid supports of a single av. size and a single fluorochrome and without the need for using other detection systems. Reagents of ***microspheres*** coated with either human immunodeficiency virus (HIV) gp41 or with goat anti-human IgG were prepd. Reagents contg. exclusively either or both of these coated ***microspheres*** were blended proportionately so that gp41-coated ***microspheres*** comprised 100, 89, 79, 68, 58, 48,38,28,19,9, and 0% of the total no. of ***microspheres*** in the regent and anti-IgG antibody-coated ***microspheres*** comprised 0, 11, 21, 32, 42, 52, 62, 72, 81, 91, and 100%, resp. Each of the 11 proportional reagents was incubated with human serum known to be pos. for both IgG and anti-gp41 antibodies; after washing, a 2nd reagent, contg. FITC-labeled anti-human IgG antibodies, was added and the the mixt. incubated, washed, and analyzed with a flow cytometer. The data were analyzed and output as a histogram; 1 or 2 histogram peaks was obsd., depending on whether the reagent contained 1 or 2 types of ***microspheres*** ,resp. Magnitudes of peak areas varied in a manner predicted by the proportionality of ***microspheres*** in the reagents. In other expts. it was shown that histogram area is independent of fluorescence intensity, that the summed area of overlapping peaks is detd. by the proportionality of the reagent ***microspheres*** whose fluorescence contributes to the combined peak in the histogram, and that the area of a histogram peak arising from nonspecific binding (i.e., a neg.) is detd. by the proportionality of the resp. ***microspheres*** in the reagent. A four-analyte serum assay using ***microspheres*** coated with IgG antibodies, HIV gp41, HIV p24, and hepatitis B core protein is also described, as are methods of data anal. for the method of the invention.

L88 ANSWER 21 OF 64 MEDLINE DUPLICATE 3
AN 93232123 MEDLINE
TI Colorimetric detection for PCR amplified HIV-1 DNA using magnetic beads.
AU Suzuki K; Okamoto N; Kano T
CS Biomedical Research Center, Olympus Corporation, East Setauket, NY 11733.
SO J Virol Methods, (1993 Mar) 41 (3) 341-50.
Journal code: HQR. ISSN: 0166-0934.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 9307
AB A rapid and nonradioactive detection method for polymerase chain reaction (PCR) amplified HIV-1 DNA was developed using a colorimetric detection system. Hybridization between biotin-labeled amplified targets and digoxigenin- ***capture*** ***probes*** occurs in solution followed by efficient and rapid capture onto streptavidin-magnetic beads. The presence of the digoxigenin-***capture*** ***probe*** hybridized with biotin-labeled targets is then detected by antidigoxigenin-alkaline phosphatase conjugates using a colorimetric substrate. This approach is highly sensitive and can detect less than 10 HIV targets prior to PCR in approximately 50 min.

AN 88:1644506 PATOSEP UP 920510 EW 9217 FS PS
TIDE Ligandspezifische Bestimmungsmethode fuer multiple Analyten mit markierten Mikrosphaeren.
TIEN Biospecific ***multianalyte*** assay method with labelled microparticles.
TIFR Procede de dosage biospecifique de plusieurs analytes avec ***microspheres*** marquees.
IN Soini, Erkki, Sirppitie 1 J, SF-20540 Turku, FI
PA WALLAC OY, P.O. Box 10, SF-20101 Turku 10, FI
PAN 480390
AG Johansson, Lars E., Pharmacia LKB Biotechnology AB Patent Department Box 305, S-161 26 Bromma, SE
AGN 23223
SO Wila-EPS-1992-H17-T2
DT Patent
LA Anmeldung in Englisch; Veroeffentlichung in Englisch
DS R DE; R FR; R GB
PIT EPB1 EUROPAEISCHE PATENTSCHRIFT
PI EP 296136 B1 920422
OD 881221
AI EP 88-850205 880607
PRAI SE 87-2511 870616
REP EP 121262 A EP 126450 A
WO 80-02076 A GB 2126341 A
US 4584277 A
REN NUCLEIC ACIDS RESEARCH, vol.14, no.2, 1986; A.-C.SYVAeNEN, pp.1017-1028
EPA1 EUROPAEISCHE PATENTANMELDUNG
EPB1 EUROPAEISCHE PATENTSCHRIFT
EPLS LEGAL STATUS
ABEN In a biospecific ***multianalyte*** assay the use of ***microspheres*** and fluorescent labels with substantially different fluorescence decay times, is combined. The assay is performed in a suspension of ***microspheres*** in the form of a pool of different ***microsphere*** categories, where the categories represent different analytes. The ***microspheres*** belonging to the respective categories are first coated with a specific reactant, i.e. the ***microspheres*** function as a solid support for the reactant and for a biospecific reaction. Fluorescent labels having a short decay time are used to identify the category of each individual ***microsphere*** , while fluorescent labels having a long decay time are used to determine the concentration of a particular analyte on the ***microsphere*** by means of the biospecific reaction.

L88 ANSWER 30 OF 64 USPATFULL DUPLICATE 5
AN 91:52484 USPATFULL
TI Biospecific ***multianalyte*** assay method
IN Soini, Erkki J., Turku, Finland
PA Wallac OY, Finland (non-U.S. corporation)
PI US 5028545 910702
AI US 88-204258 880609 (7)
PRAI SE 87-2511 870616
DT Utility
EXNAM Primary Examiner: Wax, Robert A.; Assistant Examiner: Sisson, Bradley L.
LREP Philpitt, Fred
CLMN Number of Claims: 1
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 350
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In a biospecific ***multianalyte*** assay the use of ***microspheres*** and fluorescent labels with substantially different fluorescence decay times, is combined. The assay is performed in a suspension of ***microspheres*** in the form of a pool of different ***microsphere*** categories, where the categories represent different analytes. The ***microspheres*** belonging to the respective categories are first coated with a specific reactant, i.e. the ***microspheres*** function as a solid support for the reactant and for a biospecific reaction. Fluorescent labels having a short decay time are used to identify the category of each individual ***microsphere*** , while fluorescent labels having a long decay time are used to determine the concentration of a particular analyte on the ***microsphere*** by means of the biospecific reaction.

L88 ANSWER 31

L88 ANSWER 49 OF 64 USPATFULL
AN 89:1178 USPATFULL
TI Magnetic-polymer particles
IN Owen, Charles S., Swarthmore, PA, United States
Silvia, John C., Warminster, PA, United States
D'Angelo, Louis, Berlin, NJ, United States
Liberti, Paul A., Churchville, PA, United States
PA Immunicon Corporation, Huntingdon Valley, PA, United States (U.S. corporation)
PI US 4795698 890103
AI US 86-906521 860916 (6)
RLI Continuation-in-part of Ser. No. US 85-784863, filed on 4 Oct 1985, now abandoned
DT Utility
EXNAM Primary Examiner: Nucker, Christine M.
LREP Ratner & Prestia
CLMN Number of Claims: 44
ECL Exemplary Claim: 32
DRWN No Drawings
LN.CNT 842
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A magnetic-polymer particle, useful in immunoassay techniques and various other biological/medical applications is produced by coprecipitation of transition metals in the presence of a polymer having available coordination sites. These particles are capable of forming stable aqueous suspensions and may be easily resuspended after agglomeration.

N 90054354 MEDLINE
TI A noise-free molecular hybridization procedure for measuring RNA in cell lysates.
AU Thompson J; Solomon R; Pellegrino M; Sakai K; Lewin M; Feild M; Castrovinci M; Sacramone L; Gillespie D
CS Hahnemann University, Department of Neoplastic Diseases, Philadelphia, Pennsylvania 19102.
NC GM 27270
CA 29545
SO Anal Biochem, (1989 Sep) 181 (2) 371-8.
Journal code: 4NK. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 9002
AB A solution hybridization technique was designed to measure RNA abundance in crude cell lysates and at the same time to maximize confidence that signals resulted from true molecular hybridization. Cell lysates were prepared in 5 M guanidine thiocyanate, then RNA molecules in the lysates were hybridized with two probes, a 32P-labeled RNA "label probe" which provided signal and an oligodeoxyribonucleotide " ***capture*** ***probe*** " containing a poly(dA) tail which provided a mechanism for selective purification. Ternary hybrids were "captured" on oligo(dT)-coated superparamagnetic beads through a readily reversible interaction with the poly(dA) of the ***capture*** ***probe*** . RNA did not bind to dT beads through poly(A) under the capture conditions used. Hybrids were purified through cycles of capture on and release from dT beads, with each cycle yielding a 100- to 1000-fold reduction in noise (unhybridized label probe) and a 50-90% recovery of signal (hybridized label probe). Noise was driven below detectable limits after three cycles of capture, thereby improving the sensitivity of measuring target RNA. As few as 15,000 target molecules, 15 fg of a 3-kb RNA, was detectable in the equivalent of 2 x 10(6) cells in concentrated cell lysates (10(8) cells/ml). Since hybridization with both probes was required in order to yield a signal, hybridization specificity could be adjusted with either or both probes. The greater specificity and lack of noise increased confidence that the signal was proportional to the amount of RNA of interest.

88 ANSWER 54 OF 64 CAPLUS COPYRIGHT 1995 ACS DUPLICATE 6
AN 1989:420507 CAPLUS
DN 111:20507
TI Biospecific ***multianalyte*** assay method with fluorescent-labeled microparticles
IN Soini, Erkki
PA Wallac Oy, Finland
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
PI EP 296136 A1 881221
DS R: DE, FR, GB
AI EP 88-850205 880607
PRAI SE 87-2511 870616
DT Patent
LA English
AB In a biospecific ***multianalyte*** assay, ***microspheres*** representing different analytes are labeled with different amts. of a fluorescent substance having a short decay time and are coated with a biospecific reactant, the different categories of ***microspheres*** are pooled and contacted with sample contg. the analytes and with a mixt. of biospecific reactants labeled with a fluorescent compd. having a long decay time to initiate biospecific reactions between the analytes and the labeled reactants and the ***microsphere*** -assocd. reactants. The ***microsphere*** category (analyte) is detd. based on the short decay fluorescent label and the concn. is detd. based on the long decay label. A Eu chelate is used as the long decay time fluorescent label and POPOP is used as a short decay time label.

L88 ANSWER 55 OF 64 USPATFULL
AN 88:60693 USPATFULL
TI Heterogeneous specific binding assay employing an aggregatable binding reagent
IN Greenquist, Alfred C., Elkhart, IN, United States
PA Miles Inc., Elkhart, IN, United States (U.S. corporation)
PI US 4772550 880920
AI US 86-827967 860210 (6)
DT Utility
EXNAM Primary Examiner: Marantz, Sidney; Assistant Examiner: Wagner, Richard
LREP Collins, Daniel W.
CLMN Number of Claims: 39
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 751
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A heterogeneous specific binding assay method for determining the amount of a suspected analyte in an aqueous test medium wherein a reaction mixture is formed by combining the test medium with assay reagents including a labeled reagent, an immobilizable component, and a binding substance which causes the immobilizable component to precipitate. Free and bound species of the labeled reagent are formed as a function of the amount of the analyte in the test medium. One of the free and bound species of the labeled reagent is immobilized by binding of the immobilizable component with the binding substance. The immobilized labeled reagent is seperated from labeled reagent which has not been immobilized, and the amount of label in the labeled reagent in one of the separated

fractions is determined and related to the amount of analyte in the test medium. The improvement provided is the use of an immobilizable component comprising a water dispersible, aggregatable reagent comprising a binding partner for the one of the free and bound species to be immobilized and a first binding substance which upon binding of a second binding substance forms a precipitated complex of the aggregatable reagent.

L88 ANSWER 56 OF 64 USPATFULL
AN 88:26039 USPATFULL
TI Concentrating immunochemical test device and method
IN Weng, Litai, Mountain View, CA, United States
Calderhead, David, Menlo Park, CA, United States
Khanna, Pyare, San Jose, CA, United States
Ullman, Edwin F., Atherton, CA, United States
PA Syntex (U.S.A.) Inc., Palo Alto, CA, United States (U.S. corporation)
PI US 4740468 880426
AI US 85-701464 850214 (6)
DT Utility
EXNAM Primary Examiner: Marantz, Sidney
LREP Leitereg, Theodore J.
CLMN Number of Claims: 80
ECL Exemplary Claim: 1,29
DRWN No Drawings
LN.CNT 1483
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method and device for determining the presence of an analyte in a sample suspected of containing the analyte is disclosed. The method involves contacting a test solution containing the sample and a first member of a specific ***binding*** ***pair*** with an end portion of a strip of bibulous material capable of being traversed by the test solution through capillary action. The first member of a specific ***binding*** ***pair*** is capable of binding the analyte. The strip contains a second member of a specific ***binding*** ***pair*** integral therewith for concentrating and non-diffusively binding the first sbp member at a small situs on the strip separated from the end portion of the strip. The detectible signal is produced in relation to the presence of the analyte in the test solution. The test solution passes through the situs as the test solution traverses the bibulous material. After the test solution has been allowed to traverse at least a portion of the strip, the strip is contacted with a developer solution containing members of a signal producing system in a manner that provides contact of the developer solution with the small situs following its contact with the test solution. The strip is then contacted with any remaining members of the signal producing system. The detectible signal produced at the situs is then compared with the signal detectible at a portion of the strip other than the situs to determine the analyte in the sample.

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show files
File 344:Chinese Patents Abs Apr 1985-1995/May
         (c) 1995 European Patent Office
File 347:JAPIO OCT 1976-1995/JAN.
         (c) JPO & JAPIO
File 348:European Patents 1978-1995/May W4
         (c) 1995 European Patent Office
File 350:Derwent World Pat. 1963-1980/UD=9516
         (c) 1995 Derwent Info Ltd
File 351:DERWENT WPI 1981-1995/UD=9519;UA=9514;UM=9510
         (c)1995 Derwent Info Ltd
File 357:Derwent Biotechnology Abs 1982-1995/May B2
         (c) 1995 Derwent Publ Ltd
?              11  AU=EKINS
               1  AU=EKINS R
               7  AU=EKINS R P
      S1       19  E3,E7-E8
?
               7  AU=EKINS ROGER PHILIP
               1  AU=EKINS ROGER PHILIP DEPART MOLEC ENDOCRINOL
               1  AU=EKINS ROGER PHILIP DEPARTMENT OF MOLECULAR
      S2        9  E10-E12
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      S3       10  AU="THERIAULT"
?
      S4      464  AU="CHU"
?
              10  AU=CHU F
               1  AU=CHU F W
      S6       10  E3,E8
?
S6          10   E3,E8
S7           1   AU="CHU FREDERICK WOODNAM DEPT MOLEC ENDOCRINOL"
S8         464   AU=CHU
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S9           0   (S1 OR S2) AND S3 AND (S4 OR S5 OR S7)
S10          0   (S1 OR S2) AND S3
S11          2   (S1 OR S2) AND (S4 OR S5 OR S7)
S12          0   S3 AND (S4 OR S5 OR S7)
?
t11/7/all

 11/7/1     (Item 1 from file: 348)
DIALOG(R)File 348:European Patents
(c) 1995 European Patent Office. All rts. reserv.

00622685
  BINDING ASSAY EMPLOYING LABELLED REAGENT.
PATENT ASSIGNEE:
  Multilyte Limited, (1194131), c/o M.J. Ventham & Company 2nd Floor
    Kingsbourne House 229-231 High Holborn, London WC1V 7DA, (GB),
    (applicant designated states:
    AT;BE;CH;DE;DK;ES;FR;GB;GR;IE;IT;LI;LU;MC;NL;SE)
AUTHOR (Inventor):
  *EKINS*, Roger, Philip, Depart. Molec. Endocrinol., UUniversity College
    and Middlesex School of Med., Mortimer Street London W1N 8AA, (GB)
  *CHU*, Frederick, Woodnam, Dept. Molec. Endocrinol., University College
    and Middlesex School of Med., Mortimer Street London W1N 8AA, (GB
LEGAL REPRESENTATIVE:
  Armitage, Ian Michael et al (27761), MEWBURN ELLIS York House 23 Kingsway
```

, London WC2B 6HP, (GB)
PATENT (CC, No, Kind, Date): EP 608370 A1 940803 (Basic)
WO 9308472 930429
APPLICATION (CC, No, Date): EP 92922800 921015; WO 92GB1892 921015
PRIORITY DATA (CC, No, Date): GB 9121873 911015; GB 9221094 921007
LANGUAGE (Publication,Procedural,Application): English; English; English
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LI; LU; MC; NL; SE
INTL PAT CLASS: G01N-033/543; G01N-033/58; C12Q-001/68;

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 940803 A1 Published application (A1withSR;A2withoutSR)
Examination: 940803 A1 Date of filing of request for examination: 940506

11/7/2 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI

009459098 WPI Acc No: 93-152624/18
XRAM Acc No: C93-068171
XRPX Acc No: N93-116763 *Image available*
Non-competitive binding assay for analyte detection - comprises using specific capture binding agent, using developing binding agent specific for bound analyte and labelling
Patent Assignee: (MULT-) MULTILYTE LTD
Author (Inventor): CHU F W; *EKINS R P*; *CHU F*
Number of Patents: 005
Number of Countries: 040
Patent Family:

CC	Number	Kind	Date	Week	
WO	9308472	A1	930429	9318	(Basic)
AU	9228720	A	930521	9336	
ZA	9207977	A	930929	9344	
EP	608370	A1	940803	9430	
JP	7500906	W	950126	9513	

Priority Data (CC No Date): GB 9121873 (911015); GB 9221094 (921007)
Applications (CC,No,Date): WO 92GB1892 (921015); JP 93507535 (921015); WO 92GB1892 (921015); AU 9228720 (921015); ZA 927977 (921015); EP 92922800 (921015); WO 92GB1892 (921015)
Language: English
EP and/or WO Cited Patents: EP 267317; EP 301584; EP 360088; EP 396801; WO 8401031; WO 8801058; WO 8901157
Designated States
(National): AT; AU; BB; BG; BR; CA; CH; CS; DE; DK; ES; FI; GB; HU; JP; KP ; KR; LK; LU; MG; MN; MW; NL; NO; PL; RO; RU; SD; SE; UA; US
(Regional): AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; OA; SE ; LI
Filing Details: JP07500906 Based on WO 9308472; AU9228720 Based on WO 9308472; EP0608370 Based on WO 9308472
Abstract (Basic): WO 9308472 A
A binding assay process (I) in which the concn. of an analyte in a liquid sample is determined by comparison with a dose response, curve computed from standard samples comprises (a) using a capture binding agent specific for the analyte in an amt. such that only an insignificant fraction of analyte in the sample becomes bound; (b) using a developing binding agent specific for bound analyte, sites of the capture agent bound by analyte or sites unbound by analyte; and (c)

using a label which gives a signal strength proportions to the occupancy of sites by analyte e.g. microspheres of 5 microns carrying a marker.

Also new ia a kit for (I) comprising (i) a solid support with the captive agent immobilised on it; (ii) a developing reagent comprising the binding material adsorbed or directly or indirectly chemically bonded to the surface of microspheres carrying a marker; and (iii) standards containing known concns. of the analyte to be determined. USE/ADVANTAGE - (I) is at least as rapid and sensitive as conventional sandwich systems relying on comparatively large amounts of captive agent. It could be used to develop superior minaturised diagnostic devices.

Dwg.4/8

Derwent Class: B04; D16; S03;
Int Pat Class: C12Q-001/68; G01N-033/543; G01N-033/58
Derwent Registry Numbers: 0172-U; 1850-U
?

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show files
File   5:BIOSIS PREVIEWS(R) 1969-1995/May W3
         (c) 1995 BIOSIS
File   6:NTIS 1964-1995/Jul B1
         Comp. & distr. 1995 NTIS, US Dept of Commerce
File   8:Ei Compendex*Plus(TM) 1970-1995/Jul W3
         (c) 1995 Engineering Info. Inc.
File 144:Pascal 1973-1994/Aug
         (c) 1995 INIST/CNRS
File 149:Health Periodicals DB(TM) 1976-1995/May W2
         (c) 1995 Inform. Access Co
File 305:Analytical Abstracts Online 1980-1995/May
         (c) 1995 Royal Soc Chemistry
File 434:SciSearch(R) 1974-1995/May W1
         (c) 1995 Inst for Sci Info
?             236  AU=EKINS R P
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               15  AU=EKINS, R. P.
                1  AU=EKINS, ROGER
                1  AU=EKINS, ROGER P.
      S2       33  E38-E39,E41-E42
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                2  AU=THERIAULT TP
      S3        6  E18-E19
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rd s13
...completed examining records
     S15       7  RD S13 (unique items)
?t15/7/all

 15/7/1     (Item 1 from file: 5)
DIALOG(R)File   5:BIOSIS PREVIEWS(R)
(c) 1995 BIOSIS. All rts. reserv.

11064502     BIOSIS Number: 97264502
  Developing multianalyte assays
  *Ekins R P*; *Chu F*
  Div. Molecular Endocrinology, Univ. Coll. London Med. Sch., Mortimer
Street, London W1N 8AA, UK
```

Trends in Biotechnology 12 (3). 1994. 89-94.
Full Journal Title: Trends in Biotechnology
ISSN: 0167-9430
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 012 Ref. 166052

15/7/2 (Item 2 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

9313804 BIOSIS Number: 43058804
MULTIANALYTE IMMUNOASSAY
EKINS R P; *CHU F W*
DEP. MOL. ENDOCRINOL., UNIVERSITY COLL. AND MIDDLESEX SCH. MED., UNIVERSITY COLL. LONDON, MORTIMER ST., LONDON W1N 8AA, UK.
13TH INTERNATIONAL CONFERENCE ON BIOCHEMICAL ANALYSIS, MUNICH, GERMANY, MAY 5-8, 1992. FRESENIUS' J ANAL CHEM 343 (1). 1992. 23. CODEN: FJACE
Language: ENGLISH

15/7/3 (Item 3 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

8796055 BIOSIS Number: 42021055
MULTIANALYTE MICROSPOT IMMUNOASSAY MICROANALYTICAL COMPACT DISK OF THE FUTURE
EKINS R P; *CHU F W*
DEP. MOLECULAR ENDOCRINOLOGY, UNIVERSITY COLLEGE MIDDLESEX SCH. MED., MORTIMER ST., LONDON W1N 8AA, U.K.
CLIN CHEM 37 (11). 1991. 1955-1967. CODEN: CLCHA
Full Journal Title: Clinical Chemistry
Language: ENGLISH

15/7/4 (Item 4 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

7874480 BIOSIS Number: 40075480
MULTIANALYTE IMMUNOASSAY THE IMMUNOLOGICAL COMPACT DISK OF THE FUTURE
EKINS R P; *CHU F W*; BIGGART E M
DEP. MOLECULAR ENDOCRINOL., UNIV. COLL. AND MIDDLESEX SCH. MED., MORTIMER ST., LONDON W1N 8AA, UK.
J CLIN IMMUNOASSAY 13 (4). 1990. 169-181. CODEN: JCLIE
Full Journal Title: Journal of Clinical Immunoassay
Language: ENGLISH

15/7/5 (Item 5 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

6656764 BIOSIS Number: 86123315
DETECTION OF CORTICOSTEROID BINDING GLOBULIN IN PAROTID FLUIDS EVIDENCE FOR THE PRESENCE OF BOTH PROTEIN-BOUND AND NON-PROTEIN-BOUND FREE STEROIDS IN UNCONTAMINATED SALIVA
CHU F W; *EKINS R P*
DEP. MOL. ENDOCRINOL., UNIV. COLL. MIDDLESEX SCH. MED., MORTIMER ST.,

LONDON W1N 8AA, UK.
ACTA ENDOCRINOL 119 (1). 1988. 56-60. CODEN: ACENA
Full Journal Title: Acta Endocrinologica
Language: ENGLISH

Corticosteroid binding globulin (CBG) was detected by a specific radioimmunoassy in mixed saliva (25.4 .+-. 4.0 .mu.g/l, mean .+-. SEM) and in pure, uncontaminated parotid fluids (17.4 .+-. 2.7 .mu.g/l) at resting flow-rates of approximately 500 .mu.l/min and 50 .mu.l/gland per min, respectively. In parotid fluids collected at stimulated flow-rates of between 300-1000 .mu.l/gland per min, CBG could not be detected. This observation suggests the direct flow-rate-dependent transfer/secretion of CBG in saliva. When cortisol was measured (RIA) in dilution experiments in both mixed saliva and parotid fluids using phoshate buffer at pH 7.4 as diluent, a protein-binding effect analogous to that found in plasma samples was observed. However, this effect was abolished if a known CBG inhibitor, phosphate:citrate buffer at pH 4, was used as the diluent in the assay. A bound fraction of cortisol was found in both mixed saliva (14.0 .+-. 4.0%) and parotid fluid samples (12.3 .+-. 1.3%) by equilibrium dialysis. These findings appear to contradict the currently accepted notion that specific plasma steroid binding proteins, and hence the protein-bound steroids, are absent in uncontaminated saliva; and that their presence in mixed saliva is the consequence solely of contamination by gingival fluid and/or plasma from mouth or gum abrasions. We conclude that both protein-bound and free steroids are present in uncontaminated saliva and that salivary total and plasma free steroid concentrations are not identical.

15/7/6 (Item 6 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

6218384 BIOSIS Number: 35083905
DETECTION OF CORTICOSTEROID BINDING GLOBULIN CBG IN PAROTID FLUIDS EVIDENCE FOR THE SECRETION OF BOTH PROTEIN-BOUND AND NONPROTEIN-BOUND FREE STEROIDS IN SALIVA
CHU F W; *EKINS R P*
DEP. MOL. ENDOCRINOL., UNIV. COLL., LONDON W1N 8AA.
7TH JOINT MEETING OF BRITISH ENDOCRINE SOCIETIES, EXETER, ENGLAND, UK, APRIL 18-21, 1988. J ENDOCRINOL 117 (SUPPL.). 1988. ABSTRACT 69. CODEN: JOENA
Language: ENGLISH

15/7/7 (Item 1 from file: 434)
DIALOG(R)File 434:SciSearch(R)

12891551 Genuine Article#: MY954 Number of References: 0
Title: MINIATURIZED MICRO-SPOT MULTIANALYTE IMMUNOASSAY SYSTEMS
Author(s): *EKINS RP*; *CHU FW*
Corporate Source: UCL,UNIV COLL LONDON SCH MED,DEPT MOLEC ENDOCRINOL/LONDON W1N 8AA//ENGLAND/
Journal: ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, 1994, V207, MAR (MAR 13), P150-AGRO
ISSN: 0065-7727
Language: ENGLISH Document Type: MEETING ABSTRACT
?pause
>>> PAUSE started.
?

National Institutes of Health, Bethesda, Maryland 20892
Journal: Physical Review Letters, 1994-03-28, 72 (13) 2117-2120
ISSN: 0031-9007 CODEN: PRLTAO Availability: INIST-8895
Document Type: P (Serial) ; A (Analytic)
Country of Publication: USA
Language: English

We consider some of the fundamental statistical mechanics of the electrodiffusion of a long polyelectrolyte, *DNA* , in a microlithographically constructed 2D rectangular *array* of cylindrical posts. The *DNA* polymer is shown to be free draining when not hooked on a post, and the mean time to unhook is explicitly calculated and compared to our measurements.

12/7/6 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal

10632788 PASCAL No.: 93-0142064
DNA electrophoresis in microlithographic *arrays*
VOLKMUTH W D; AUSTIN R H
Princeton univ., dep. physics, Princeton NJ 08544, USA
Journal: Nature : (London), 1992, 358 (6387) 600-602
ISSN: 0028-0836 CODEN: NATUAS Availability: INIST-142; 354000020294790260
No. of Refs.: 19 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English

12/7/7 (Item 7 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

11246353 BIOSIS Number: 97446353
Development of enzyme-linked immunosorbent *assay* for biliary *apolipoprotein* A-I and a diurnal change of apolipoprotein A-I concentration in human bile
Nishimura H; Hasegawa T; Saitoh H
Second Dep. Internal Med., Asahikawa Med. Coll., JAP
Japanese Journal of Gastroenterology 91 (6). 1994. 1111-1120.
Full Journal Title: Japanese Journal of Gastroenterology
ISSN: 0446-6586
Language: JAPANESE
Print Number: Biological Abstracts Vol. 098 Iss. 008 Ref. 100665

Enzyme-linked immunosorbent *assay* for measuring biliary *apolipoprotein* A-I was established. Utilizing this *assay*, a diurnal change of *apolipoprotein* A-I concentration in hepatic bile obtained from percutaneous transhepatic drainage was investigated. A biliary apolipoprotein A-I concentration changed from time to time, and correlations between apolipoprotein A-I and total protein concentration, cholesterol concentration and *lithogenic* index, r=0.873, 0.863 and 0.567 respectively, were observed. Moreover, biliary total protein concentration was closely related with *lithogenic* index (r=0.671). These data suggest that hepatic *lithogenic* bile may induce apolipoprotein A-I secretion into hepatic bile.

12/7/9 (Item 9 from file: 305)
DIALOG(R)File 305:Analytical Abstracts Online

209808 AA Accession No.: 56-02-F-00140 DOC. TYPE: Journal
Electrophoresis and microlithography.
AUTHOR: Austin, R. H.; Volkmuth, W. D.
CORPORATE SOURCE: Dept. Phys., Princeton Univ., Princeton, NJ 08544, USA
JOURNAL: Analusis, Volume: 21, Issue: 5, Page(s): 235-238
CODEN: ANLSCY ISSN: 0365-4877
PUBLICATION DATE: Jun 1993 (930600) LANGUAGE: English
ABSTRACT: Semiconductor processing techniques were used to produce gels having 1 .mu.m diam. posts with 2 .mu.m centre-to-centre spacing. *Photolithography* was used to expose a pattern of posts in photoresist on a Si wafer. Then SiO2 was etched away from around the posts using a plasma etch and four narrow gold wires were placed across the array for monitoring the electric field during electrophoresis. Finally a Pyrex coverslip was bonded to the posts. The *array* was used for the electrophoresis of *DNA*; imaging experiments showed the interaction of DNA molecules with the posts, thus eliminating the uncertainty of imaging in gels. DNA molecules of different length could also be separated.

12/7/10 (Item 10 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

11295676 BIOSIS Number: 97495676
Gray code masks for sequencing by hybridization
Feldman W; Pevzner P
Dep. Computer Sci. Eng., Pa. State Univ., University Park, PA 16802, USA
Genomics 23 (1). 1994. 233-235.
Full Journal Title: Genomics
ISSN: 0888-7543
Language: ENGLISH
Print Number: Biological Abstracts Vol. 098 Iss. 010 Ref. 131415
In light-directed synthesis of high-density oligonucleotide arrays for sequencing by hybridization, synthesis errors result from the unintended illumination of chip regions that should remain dark. Most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall lengths of these borders in masks for *photolithographic* chip design. This article describes an application of two-dimensional Gray codes and demonstrates that masks based on this approach are optimal for minimizing the border length in VLSIPS (very large scale immobilized polymer synthesis).

12/7/12 (Item 12 from file: 149)
DIALOG(R)File 149:Health Periodicals DB(TM)

10474079 Supplier Number: 10474079 *Use Format 9 for FULL TEXT*
TITLE: Light-directed, spatially addressable parallel chemical synthesis.
AUTHOR: Fodor, Stephen P.A.; Read, J. Leighton; Pirrung, Michael C.; Stryer, Lubert; Lu, Amy Tsai; Solas, Dennis
JOURNAL: Science VOL.: v251 ISSUE: n4995 PAGINATION: p767(7)

PUBLICATION DATE: Feb 15, 1991
AVAILABILITY: FULL TEXT Online LINE COUNT: 00427
SOURCE FILE: MI File 47

12/7/13 (Item 13 from file: 8)
DIALOG(R)File 8:Ei Compendex*Plus(TM)

03986529 E.I. No: EIP94111439868
Title: Light directed synthesis of oligonucleotide arrays
Author: Rava, Richard P.; Fodor, Stephen P.A.
Corporate Source: Affymetrix, Santa Clara, CA, USA
Conference Title: Proceedings of the 21st International Quantum Electronics Conference (IQEC'94)
Conference Location: Anaheim, CA, USA
Sponsor: Optical Society of America; IEEE; American Physical Society
E.I. Conference No.: 20873
Source: Proceedings of the International Quantum Electronics Conference (IQEC'94) 1994. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA. 25p
Publication Year: 1994
CODEN: 001601 ISBN: 0-7803-1973-7
Language: English
Document Type: CA; (Conference Article) Treatment: X; (Experimental)
Journal Announcement: 9501W1
Abstract: *Photolithography* has been combined with solid-phase chemical synthesis to fabricate high-density, spatially addressable arrays of oligonucleotides. Experiments with these oligonucleotide arrays demonstrate that the *arrays* can be used to detect complementary *DNA* sequences. (Author abstract)

12/7/14 (Item 14 from file: 8)
DIALOG(R)File 8:Ei Compendex*Plus(TM)

03953548 E.I. No: EIP94101423130
Title: Light directed synthesis of oligonucleotide arrays
Author: Rava, Richard P.; Fodor, Stephen P.A.
Corporate Source: Affymetrix, Santa Clara, CA, USA
Conference Title: Proceedings of the Conference on Lasers and Electro-Optics
Conference Location: Anaheim, CA, USA
Sponsor: Optical Society of America; IEEE/Lasers and Electro-Optics Society; European Physical Society
E.I. Conference No.: 20782
Source: Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting v 8 1994. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA,94CH3463-7. 44p
Publication Year: 1994
CODEN: CPLSE4 ISBN: 0-7803-1971-0
Language: English
Document Type: CA; (Conference Article) Treatment: X; (Experimental)
Journal Announcement: 9411W3
Abstract: *Photolithography* has been combined with solid-phase chemical synthesis to fabricate high-density, spatially addressable arrays of oligonucleotides. Experiments with these oligonucleotide arrays demonstrate that the *arrays* can be used to detect complementary *DNA* sequences. (Author abstract)

12/7/15 (Item 15 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

11108297 BIOSIS Number: 97308297
Light-generated oligonucleotide *arrays* for rapid *DNA* sequence analysis
Pease A C; Solas D; Sullivan E J; Cronin M T; Holmes C P; Fodor S P A
Affymax, 4001 Miranda Ave., Palo Alto, CA 94304, USA
Proceedings of the National Academy of Sciences of the United States of America 91 (11). 1994. 5022-5026.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 098 Iss. 002 Ref. 014809
In many areas of molecular biology there is a need to rapidly extract and analyze genetic information; however, current technologies for DNA sequence analysis are slow and labor intensive. We report here how modern *photolithographic* techniques can be used to facilitate sequence analysis by generating miniaturized arrays of densely packed *oligonucleotide* *probes*. These *probe* *arrays*, or *DNA* chips, can then be applied to parallel DNA hybridization analysis, directly yielding sequence information. In a preliminary experiment, a 1.28 times 1.28 cm array of 256 different octanudeotides was produced in 16 chemical reaction cycles, requiring 4 hr to complete. The hybridization pattern of fluorescendy labeled oligonucleotide targets was then detected by epifluorescence microscopy. The fluorescence signals from complementary probes were 5-35 times stronger than those with single or double base-pair hybridization mismatches, demonstrating specificity in the identification of complementary sequences. This method should prove to be a powerful tool for rapid investigations in human genetics and diagnostics, pathogen detection, and DNA molecular recognition.

12/7/16 (Item 16 from file: 73)
DIALOG(R)File 73:EMBASE

9234495 EMBASE No: 94167262
Light-generated oligonucleotide *arrays* for rapid *DNA* sequence analysis
Pease A.C.; Solas D.; Sullivan E.J.; Cronin M.T.; Holmes C.P.; Fodor S.P.A.
Affymax, 4001 Miranda Avenue, Palo Alto, CA 94304 USA
PROC. NATL. ACAD. SCI. U. S. A. (USA) , 1994, 91/11 (5022-5026) CODEN: PNASA ISSN: 0027-8424
LANGUAGES: English SUMMARY LANGUAGES: English
In many areas of molecular biology there is a need to rapidly extract and analyze genetic information; however, current technologies for DNA sequence analysis are slow and labor intensive. We report here how modern *photolithographic* techniques can be used to facilitate sequence analysis by generating miniaturized arrays of densely packed *oligonucleotide* *probes*. These *probe* *arrays*, or *DNA* chips, can then be applied to parallel DNA hybridization analysis, directly yielding sequence information. In a preliminary experiment, a 1.28 x 1.28 cm array of 256 different octanucleotides was produced in 16 chemical reaction cycles, requiring 4 hr to complete. The hybridization pattern of fluorescently labeled oligonucleotide targets was then detected by epifluorescence

microscopy. The fluorescence signals from complementary probes were 5-35 times stronger than those with single or double base-pair hybridization mismatches, demonstrating specificity in the identification of complementary sequences. This method should prove to be a powerful tool for rapid investigations in human genetics and diagnostics, pathogen detection, and DNA molecular recognition.

12/7/17 (Item 17 from file: 434)
DIALOG(R)File 434:SciSearch(R)

13077787 Genuine Article#: NN214 Number of References: 9
Title: LIGHT-GENERATED OLIGONUCLEOTIDE *ARRAYS* FOR RAPID *DNA*-SEQUENCE ANALYSIS
Author(s): PEASE AC; SOLAS D; SULLIVAN EJ; CRONIN MT; HOLMES CP; FODOR SPA
Corporate Source: AFFYMETRIX,3380 CENT EXPRESSWAY/SANTA CLARA//CA/95051; AFFYMAX RES INST/PALO ALTO//CA/94304
Journal: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 1994, V91, N11 (MAY 24), P5022-5026
ISSN: 0027-8424
Language: ENGLISH Document Type: ARTICLE
Abstract: In many areas of molecular biology there is a need to rapidly extract and analyze genetic information; however, current technologies for DNA sequence analysis are slow and labor intensive. We report here how modern *photolithographic* techniques can be used to facilitate sequence analysis by generating miniaturized arrays of densely packed *oligonucleotide* *probes*. These *probe* *arrays*, or *DNA* chips, can then be applied to parallel DNA hybridization analysis, directly yielding sequence information. In a preliminary experiment, a 1.28 x 1.28 cm array of 256 different octanucleotides was produced in 16 chemical reaction cycles, requiring 4 hr to complete. The hybridization pattern of fluorescently labeled oligonucleotide targets was then detected by epifluorescence microscopy. The fluorescence signals from complementary probes were 5-35 times stronger than those with single or double base-pair hybridization mismatches, demonstrating specificity in the identification of complementary sequences. This method should prove to be a powerful tool for rapid investigations in human genetics and diagnostics, pathogen detection, and DNA molecular recognition.

12/7/18 (Item 18 from file: 434)
DIALOG(R)File 434:SciSearch(R)

12960876 Genuine Article#: NB214 Number of References: 17
Title: MULTISAMPLE ANALYSIS USING AN *ARRAY* OF MICROREACTORS FOR AN ALTERNATING-CURRENT FIELD-ENHANCED *LATEX* IMMUNOASSAY
Author(s): SONG MI; IWATA K; YAMADA M; YOKOYAMA K; TAKEUCHI T; TAMIYA E; KARUBE I
Corporate Source: UNIV TOKYO,ADV SCI & TECHNOL RES CTR,MEGURO KU,4-6-1 KOMABA/TOKYO 153//JAPAN/; UNIV TOKYO,ADV SCI & TECHNOL RES CTR,MEGURO KU/TOKYO 153//JAPAN/
Journal: ANALYTICAL CHEMISTRY, 1994, V66, N6 (MAR 15), P778-781
ISSN: 0003-2700
Language: ENGLISH Document Type: ARTICLE
Abstract: To develop a rapid and multisample analysis system for *latex* immunoassay with submicroliters of sample, an *array* of microreactors were fabricated using micromachining techniques including *photolithography*, anisotropic etching, and thin gold film deposition.

The chamber volume for immunoreactions of a single well was 0.4 mu L. An alternating-current (ac) field was used to enhance the rate of the latex agglutination reaction. By applying an sc field for 1 min, alpha-fetoprotein in several samples could be determined simultaneously. The detection limit in this system was similar to 10 pg/mL.

12/7/19 (Item 19 from file: 305)
DIALOG(R)File 305:Analytical Abstracts Online

219462 AA Accession No.: 56-09-F-00212 DOC. TYPE: Journal
Multi-sample analysis using an *array* of micro-reactors for an alternating-current field-enhanced *latex* immunoassay.
AUTHOR: Song, M. I.; Iwata, K.; Yamada, M.; Yokoyama, K.; Takeuchi, T.; Tamiya, E.; Karube, I.
CORPORATE SOURCE: Res. Center for Advanced Sci. and Technol., Univ. Tokyo, Tokyo 153, Japan
JOURNAL: Anal. Chem., Volume: 66, Issue: 6, Page(s): 778-781
CODEN: ANCHAM ISSN: 0003-2700
PUBLICATION DATE: 15 Mar 1994 (940315) LANGUAGE: English
ABSTRACT: Micro-machining techniques including *photolithography* , anisotropic etching and thin Au film deposition were used to fabricate a multi-well *array* of micro-reactors for *latex* immunoassay. Pyrex glass plates contained four channels which were etched to a depth of 80 .mu.m; the chamber volume for reaction in each channel was 0.4 .mu.l. For the analysis of the model compound .alpha.-foetoprotein, a 1% IgG-latex soln. in glycine-buffered saline comprising 100mM-glycine, 100mM-NaCl, 0.2% BSA and 0.05% NaN3 at pH 8.6 was mixed with its antigen and transferred to the micro-reactor channels by capillary action. A 100 kHz, 12 V a.c. field was applied for 1 min and the agglutinated latex soln. were diluted to 0.02% latex concentration with glycine-buffered saline as above but containing 50mM-NaCl. The number of agglutinated IgG-latex particles was counted by fluorescence image analysis and the agglutination ratio was determined. The detection limit for .alpha.-foetoprotein was 10 pg/ml and the calibration graph was linear from 10 pg/ml to 500 ng/ml. The method was more sensitive and rapid than conventional latex immunoreactions with incubation.

12/7/21 (Item 21 from file: 434)
DIALOG(R)File 434:SciSearch(R)

11293316 Genuine Article#: GY462 Number of References: 149
Title: THE POTENTIAL OF HYDROGEN POLYMERS IN SENSOR APPLICATIONS
Author(s): DAVIES ML; TIGHE BJ
Corporate Source: UNIV ASTON,DEPT CHEM ENGN & APPL CHEM,SPECIAL MAT GRP/BIRMINGHAM B4 7ET/W MIDLANDS/ENGLAND/
Journal: SELECTIVE ELECTRODE REVIEWS, 1991, V13, N2, P159-226
Language: ENGLISH Document Type: REVIEW
?t12/7/23-25,27

12/7/23 (Item 23 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)

11444115 BIOSIS Number: 98044115
Ultra-high-speed *DNA* fragment separations using microfabricated

capillary *array* electrophoresis chips
Woolley A T; Mathies R A
Dep. Chem., Univ. California, Berkeley, CA 94720, USA
Proceedings of the National Academy of Sciences of the United States of America 91 (24). 1994. 11348-11352.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 003 Ref. 028659
Capillary electrophoresis arrays have been fabricated on planar glass substrates by *photolithographic* masking and chemical etching techniques. The *photolithographically* defined channel patterns were etched in a glass substrate, and then capillaries were formed by thermally bonding the etched substrate to a second glass slide. High-resolution electrophoretic separations of vphi-X174 Hae III DNA restriction fragments have been performed with these chips using a hydroxyethyl cellulose sieving matrix in the channels. DNA fragments were fluorescently labeled with dye in the running buffer and detected with a laser-excited, confocal fluorescence system. The effects of variations in the electric field, procedures for injection, and sizes of separation and injection channels (ranging from 30 to 120 mu-m) have been explored. By use of channels with an effective length of only 3.5 cm, separations of vphi-X174 Hae III DNA fragments from apprxeq 70 to 1000 hp are complete in only 120 sec. We have also demonstrated high-speed sizing of PCR-amplified HLA-DQ-alpha alleles. This work establishes methods for high-speed, high-throughput *DNA* separations on capillary *array* electrophoresis chips.

12/7/24 (Item 24 from file: 73)
DIALOG(R)File 73:EMBASE

9411037 EMBASE No: 94359634
Ultra-high-speed *DNA* fragment separations using microfabricated capillary *array* electrophoresis chips
Woolley A.T.; Mathies R.A.
Department of Chemistry, University of California, Berkeley, CA 94720 USA
PROC. NATL. ACAD. SCI. U. S. A. (USA) , 1994, 91/24 (11348-11352)
CODEN: PNASA ISSN: 0027-8424
LANGUAGES: English SUMMARY LANGUAGES: English
Capillary electrophoresis arrays have been fabricated on planar glass substrates by *photolithographic* masking and chemical etching techniques. The *photolithographically* defined channel patterns were etched in a glass substrate, and then capillaries were formed by thermally bonding the etched substrate to a second glass slide. High-resolution electrophoretic separations of phiX174 Hae III DNA restriction fragments have been performed with these chips using a hydroxyethyl cellulose sieving matrix in the channels. DNA fragments were fluorescently labeled with dye in the running buffer and detected with a laser-excited, confocal fluorescence system. The effects of variations in the electric field, procedures for injection, and sizes of separation and injection channels (ranging from 30 to 120 microm) have been explored. By use of channels with an effective length of only 3.5 cm, separations of phiX174 Hae III DNA fragments from similar70 to 1000 bp are complete in only 120 sec. We have also demonstrated high-speed sizing of PCR-amplified HLA-DQalpha alleles. This work establishes methods for high-speed, high- throughput *DNA* separations on capillary *array* electrophoresis chips.

12/7/25 (Item 25 from file: 434)
DIALOG(R)File 434:SciSearch(R)

13499546 Genuine Article#: PU285 Number of References: 29
Title: ULTRA-HIGH-SPEED *DNA* FRAGMENT SEPARATIONS USING MICROFABRICATED CAPILLARY *ARRAY* ELECTROPHORESIS CHIPS
Author(s): WOOLLEY AT; MATHIES RA
Corporate Source: UNIV CALIF BERKELEY,DEPT CHEM/BERKELEY//CA/94720; UNIV CALIF BERKELEY,DEPT CHEM/BERKELEY//CA/94720
Journal: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 1994, V91, N24 (NOV 22), P11348-11352
ISSN: 0027-8424
Language: ENGLISH Document Type: ARTICLE
Abstract: Capillary electrophoresis arrays have been fabricated on planar glass substrates by *photolithographic* masking and chemical etching techniques. The *photolithographically* defined channel patterns were etched in a glass substrate, and then capillaries were formed by thermally bonding the etched substrate to a second glass slide. High-resolution electrophoretic separations of phi X174 Hae III DNA restriction fragments have been performed with these chips using a hydroxyethyl cellulose sieving matrix in the channels. DNA fragments were fluorescently labeled with dye in the running buffer and detected with a laser-excited, confocal fluorescence system. The effects of variations in the electric field, procedures for injection, and sizes of separation and injection channels (ranging from 30 to 120 mu m) have been explored. By use of channels with an effective length of only 3.5 cm, separations of phi X174 Hae III DNA fragments from approximate to 70 to 1000 bp are complete in only 120 sec. We have also demonstrated high-speed sizing of PCR-amplified HLA-DQ alpha alleles. This work establishes methods for high-speed, high-throughput *DNA* separations on capillary *array* electrophoresis chips.

12/7/27 (Item 27 from file: 149)
DIALOG(R)File 149:Health Periodicals DB(TM)

11379073 Supplier Number: 11379073 *Use Format 9 for FULL TEXT*
TITLE: Will "DNA chip" speed genome initiative? (creating DNA sequences)
AUTHOR: Barinaga, Marcia
JOURNAL: Science VOL.: v253 ISSUE: n5027 PAGINATION: p1489(1)
PUBLICATION DATE: Sept 27, 1991
AVAILABILITY: FULL TEXT Online LINE COUNT: 00082
SOURCE FILE: MI File 47
?

S7 24996 LITHOG? OR PHOTOLITHOG? OR TYPOLITHOG? OR LITHOPHOTOG? OR - PLANOGRA? OR AUTOLITHOG? OR CHROMOLITHOG?

S9 239 S7 AND (SEQUENC? OR SBH)
S10 14 S9 AND HYBRID?
S11 6 S10 NOT S8

S13 1701 S7 AND (MOLECUL? OR DNA? OR PROTEIN? OR BIOMOLECUL? OR MIC- ROMOLECUL? OR MACROMOLECUL?)
S14 9 S13 AND SEQUENC?(5N)HYBRID?
?
S15 0 S14 NOT (S8 OR S11)
?±
id s11
...completed examining records
S16 6 ID S11 (sorted in duplicate order)
?t16/6/all

16/6/1 (Item 1 from file: 6)
1783688 NTIS Accession Number: N94-30445/8/XAB
Combined Electron Beam/Optical Lithography Process Step for the Fabrication of sub-Half-Micron-Gate-Length MMIC Chips
NTIS Prices: (Order as N94-30440/9, PC A20/MF A04)

16/6/2 (Item 2 from file: 73)
9352080 EMBASE No: 94293600
Gray code masks for *sequencing* by *hybridization*

16/6/3 (Item 3 from file: 144)
11812977 PASCAL No.: 94-0696358
Gray code masks for *sequencing* by *hybridization*

16/6/4 (Item 4 from file: 434)
13337228 Genuine Article#: PG072 Number of References: 12
Title: GRAY CODE MASKS FOR *SEQUENCING* BY *HYBRIDIZATION* (Abstract Available)

16/6/5 (Item 5 from file: 149)
10873129 Supplier Number: 10873129 *Use Format 9 for FULL TEXT*
TITLE: Hot tools. (new laboratory equipment) (special section: Science Careers)

16/6/6 (Item 6 from file: 8)
00678172
Title: TECHNOLOGY OF THIN-FILM *HYBRID* MICROWAVE CIRCUITS.
?t16/7/2-5

16/7/2 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

9352080 EMBASE No: 94293600
Gray code masks for *sequencing* by *hybridization*
Feldman W.; Pevzner P.
Dept. of Computer Sci./Engineering, Molecular Evolutionary Genet. Inst.,

Pennsylvania State University, University Park, PA 16802 USA
GENOMICS (USA) , 1994, 22/4 (233-235) CODEN: GNMCE ISSN: 0888-7543
LANGUAGES: English SUMMARY LANGUAGES: English
In light-directed synthesis of high-density oligonucleotide arrays for *sequencing* by *hybridization* , synthesis errors result from the unintended illumination of chip regions that should remain dark. Most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall lengths of these borders in masks for *photolithographic* chip design. This article describes an application of two- dimensional Gray codes and demonstrates that masks based on this approach are optimal for minimizing the border length in VLSIPS (very large scale immobilized polymer synthesis).

16/7/3 (Item 3 from file: 144)
DIALOG(R)File 144:Pascal

11812977 PASCAL No.: 94-0696358
Gray code masks for *sequencing* by *hybridization*
FELDMAN W; PEVZNER P
Pennsylvania State univ., dep. computer sci. eng., University Park PA 16802, USA
Journal: Genomics : (San Diego, CA), 1994, 23 (1) 233-235
ISSN: 0888-7543 Availability: INIST-21389; 354000041346990310
No. of Refs.: 12 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: USA
Language: English
In light-directed synthesis of high-density oligonucleotide arrays for *sequencing* by *hybridization* , synthesis errors result from the unintended illumination of chip regions that should remain dark. Most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall lengths of these borders in masks for *photolithographic* chip design. This article describes an application of two-dimensional Gray codes and demonstrates that masks based on this approach are optimal for minimizing the border length in VLSIPS (very large scale immobilized polymer synthesis)

16/7/4 (Item 4 from file: 434)
DIALOG(R)File 434:SciSearch(R)

13337228 Genuine Article#: PG072 Number of References: 12
Title: GRAY CODE MASKS FOR *SEQUENCING* BY *HYBRIDIZATION*
Author(s): FELDMAN W; PEVZNER P
Corporate Source: PENN STATE UNIV,DEPT COMP SCI & ENGN/UNIVERSITYPK//PA/16802; PENN STATE UNIV,DEPT COMP SCI & ENGN/UNIVERSITYPK//PA/16802; PENN STATE UNIV,INST MOLEC EVOLUT GENET/UNIVERSITY PK//PA/16802
Journal: GENOMICS, 1994, V23, N1 (SEP 1), P233-235
ISSN: 0888-7543
Language: ENGLISH Document Type: NOTE
Abstract: In light-directed synthesis of high-density oligonucleotide arrays for *sequencing* by *hybridization*, synthesis errors result

from the unintended illumination of chip regions that should remain dark. Most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall lengths of these borders in masks for *photolithographic* chip design. This article describes an application of two-dimensional Gray codes and demonstrates that masks based on this approach are optimal for minimizing the border length in VLSIPS (very large scale immobilized polymer synthesis). (C) 1994 Academic Press, Inc.

16/7/5 (Item 5 from file: 149)
DIALOG(R)File 149:Health Periodicals DB(TM)

10873129 Supplier Number: 10873129 *Use Format 9 for FULL TEXT*
TITLE: Hot tools. (new laboratory equipment) (special section: Science Careers)
AUTHOR: Culotta, Elizabeth
JOURNAL: Science VOL.: v252 ISSUE: n5009 PAGINATION: p1136(3)
PUBLICATION DATE: May 24, 1991
AVAILABILITY: FULL TEXT Online LINE COUNT: 00226
SOURCE FILE: MI File 47
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show files
File   5:BIOSIS PREVIEWS(R) 1969-1995/May W4
         (c) 1995 BIOSIS
File   6:NTIS 1964-1995/Jul B1
         Comp. & distr. 1995 NTIS, US Dept of Commerce
File   8:Ei Compendex*Plus(TM) 1970-1995/Jul W3
         (c) 1995 Engineering Info. Inc.
File  73:EMBASE 1974-1995/Iss 22
         (c) 1995 Elsevier Science B.V.
File 144:Pascal 1973-1994/Aug
         (c) 1995 INIST/CNRS
File 149:Health Periodicals DB(TM) 1976-1995/May W2
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         (c) 1995 Royal Soc Chemistry
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         (c)1995 RoySocChm,DECHEMA,FizChemie
File 434:SciSearch(R) 1974-1995/May W2
         (c) 1995 Inst for Sci Info
?Set      Items   Description
S1         1230   CAPTUR?(3N)(BIND? OR BOUND? OR BOND? OR AGENT?)
S2      2855329   OLIGONUCLEOTIDE? OR POLYNUCLEOTIDE? OR PROTEIN? OR (OLIGO -
              OR POLY)()NUCLEOTIDE?
S3        70594   S2(5N)(POLYMER? ? OR COPOLYMER?  OR HOMOPOLYMER? OR TERPOL-
              YMER? OR RESIN? OR GUM? OR PROBE? OR PARTICLE? OR PARTICULATE?
               OR S1 OR BIOPROBE? OR MICROPARTIC? OR MACROPARTIC? OR MICROP-
              ROB? OR MACROPROB?)
S4       954142   MICROSPHER? OR MICROCHIP? OR BIOCHIP? OR MICROASSAY? OR MI-
              CROSPOT? OR MICROGLOB? OR (MICRO OR SUPER)()(CHIP? OR ASSAY? -
              OR SPOT? OR GLOB? OR ARRAY?) OR ARRAY? OR SUPERCHIP? OR ASSAY?
               OR MICROARRAY?
S5         3375   S4(7N)(LATEX? OR (FLUORESCEN? OR REFLECT?)(3N)DYE?)
S6        80268   S4(7N)(DNA? OR PROTEIN?)
S7        24996   LITHOG? OR PHOTOLITHOG? OR TYPOLITHOG? OR LITHOPHOTOG? OR -
              PLANOGRA? OR AUTOLITHOG? OR CHROMOLITHOG?
S8           28   S7 AND (S3 OR S5 OR S6)

id s8
...completed examining records
     S12       28  ID S8 (sorted in duplicate order)
?t12/6/all

 12/6/1     (Item 1 from file: 149)
 11460865    Supplier Number: 11460865      *Use Format 9 for FULL TEXT*
 TITLE: Chemical microsensors.


 12/6/2     (Item 2 from file: 434)
06638917   Genuine Article#: ANU65   Number of References: 132
Title: CHEMICAL APPLICATIONS OF PHOTOCONDUCTORS FOR THE STORAGE OF
    SOLAR-ENERGY AND OPTICAL INFORMATION


 12/6/3     (Item 3 from file: 6)
1763697 NTIS Accession Number: PB94-147253/XAB
  Differential Thermometric Bioanalytical Device
  (Final rept. on phase 1)
  NTIS Prices: PC A03/MF A01
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12/6/4 (Item 4 from file: 315)
347441
DNA chips under development for sequencing applications.

12/6/5 (Item 5 from file: 144)
11485816 PASCAL No.: 94-0323811
DNA electrodiffusion in a 2D *array* of posts

12/6/6 (Item 6 from file: 144)
10632788 PASCAL No.: 93-0142064
DNA electrophoresis in microlithographic *arrays*

12/6/7 (Item 7 from file: 5)
11246353 BIOSIS Number: 97446353
Development of enzyme-linked immunosorbent *assay* for biliary *apolipoprotein* A-I and a diurnal change of apolipoprotein A-I concentration in human bile
Print Number: Biological Abstracts Vol. 098 Iss. 008 Ref. 100665

12/6/8 (Item 8 from file: 149)
10678166 Supplier Number: 10678166 *Use Format 9 for FULL TEXT*
TITLE: Effect of dietary ethanol on gallbladder absorption and cholesterol gallstone formation in the prairie dog.

12/6/9 (Item 9 from file: 305)
209808
Electrophoresis and microlithography.

12/6/10 (Item 10 from file: 5)
11295676 BIOSIS Number: 97495676
Gray code masks for sequencing by hybridization
Print Number: Biological Abstracts Vol. 098 Iss. 010 Ref. 131415

12/6/11 (Item 11 from file: 149)
10408216 Supplier Number: 10408216 *Use Format 9 for FULL TEXT*
TITLE: Humoral control of gut function. (State-of-the-art address for the Society for Surgery of the Alimentary Tract.)

12/6/12 (Item 12 from file: 149)
10474079 Supplier Number: 10474079 *Use Format 9 for FULL TEXT*
TITLE: Light-directed, spatially addressable parallel chemical synthesis.

12/6/13 (Item 13 from file: 8)
03986529
Title: Light directed synthesis of oligonucleotide arrays
Conference Title: Proceedings of the 21st International Quantum Electronics Conference (IQEC'94)

12/6/14 (Item 14 from file: 8)
03953548
Title: Light directed synthesis of oligonucleotide arrays
Conference Title: Proceedings of the Conference on Lasers and Electro-Optics

12/6/15 (Item 15 from file: 5)
11108297 BIOSIS Number: 97308297
Light-generated oligonucleotide *arrays* for rapid *DNA* sequence analysis
Print Number: Biological Abstracts Vol. 098 Iss. 002 Ref. 014809

12/6/16 (Item 16 from file: 73)
9234495 EMBASE No: 94167262
Light-generated oligonucleotide *arrays* for rapid *DNA* sequence analysis

12/6/17 (Item 17 from file: 434)
13077787 Genuine Article#: NN214 Number of References: 9
Title: LIGHT-GENERATED OLIGONUCLEOTIDE *ARRAYS* FOR RAPID *DNA*-SEQUENCE ANALYSIS (Abstract Available)

12/6/18 (Item 18 from file: 434)
12960876 Genuine Article#: NB214 Number of References: 17
Title: MULTISAMPLE ANALYSIS USING AN *ARRAY* OF MICROREACTORS FOR AN ALTERNATING-CURRENT FIELD-ENHANCED *LATEX* IMMUNOASSAY (Abstract Available)

12/6/19 (Item 19 from file: 305)
219462
Multi-sample analysis using an *array* of micro-reactors for an alternating-current field-enhanced *latex* immunoassay.

12/6/20 (Item 20 from file: 8)
01895006
Title: OPPORTUNITIES FOR PROTEIN/RESIST COMPOSITE FILMS IN SOLID STATE SENSORS USED IN BIOCHEMICAL PROCESS MONITORING.
Conference Title: Extended Abstracts, Spring Meeting - Electrochemical Society.

12/6/21 (Item 21 from file: 434)
11293316 Genuine Article#: GY462 Number of References: 149
Title: THE POTENTIAL OF HYDROGEN POLYMERS IN SENSOR APPLICATIONS

12/6/22 (Item 22 from file: 6)
1669453 NTIS Accession Number: AD-A259 726/8/XAB
Solid State Research
(Quarterly technical rept. 1 Feb-30 Apr 92)
NTIS Prices: PC A05/MF A01

12/6/23 (Item 23 from file: 5)

11444115 BIOSIS Number: 98044115
Ultra-high-speed *DNA* fragment separations using microfabricated capillary *array* electrophoresis chips
Print Number: Biological Abstracts Vol. 099 Iss. 003 Ref. 028659

12/6/24 (Item 24 from file: 73)
9411037 EMBASE No: 94359634
Ultra-high-speed *DNA* fragment separations using microfabricated capillary *array* electrophoresis chips

12/6/25 (Item 25 from file: 434)
13499546 Genuine Article#: PU285 Number of References: 29
Title: ULTRA-HIGH-SPEED *DNA* FRAGMENT SEPARATIONS USING MICROFABRICATED CAPILLARY *ARRAY* ELECTROPHORESIS CHIPS (Abstract Available)

12/6/26 (Item 26 from file: 149)
10408262 Supplier Number: 10408262 *Use Format 9 for FULL TEXT*
TITLE: Why does somatostatin cause gallstones?

12/6/27 (Item 27 from file: 149)
11379073 Supplier Number: 11379073 *Use Format 9 for FULL TEXT*
TITLE: Will "DNA chip" speed genome initiative? (creating DNA sequences)

12/6/28 (Item 28 from file: 5)
4010806 BIOSIS Number: 75058165
3 CASES OF HYPER LIPO *PROTEINEMIA* EFFECT OF THE ION EXCHANGE *RESIN* CHOLESTYRAMINE ON THE ELIMINATION OF CHOLESTEROL IN HYPER LIPO *PROTEINEMIA*
?t12/7/1,3-7,9-10,12-19,21

12/7/1 (Item 1 from file: 149)
DIALOG(R)File 149:Health Periodicals DB(TM)

11460865 Supplier Number: 11460865 *Use Format 9 for FULL TEXT*
TITLE: Chemical microsensors.
AUTHOR: Hughes, R.C.; Ricco, A.J.; Butler, M.A.; Martin, S.J.
JOURNAL: Science VOL.: v254 ISSUE: n5028 PAGINATION: p74(7)
PUBLICATION DATE: Oct 4, 1991
AVAILABILITY: FULL TEXT Online LINE COUNT: 00574
SOURCE FILE: MI File 47

12/7/3 (Item 3 from file: 6)
DIALOG(R)File 6:NTIS

1763697 NTIS Accession Number: PB94-147253/XAB
Differential Thermometric Bioanalytical Device
(Final rept. on phase 1)
Malmros, M. K.
Ohmicron Corp., Newtown, PA.
Corp. Source Codes: 103159000
Sponsor: National Science Foundation, Washington, DC. Small Business Innovation Research Programs.

Report No.: NSF/ISI-90060
30 Jun 90 46p
Languages: English
Journal Announcement: GRAI9411
Sponsored by National Science Foundation, Washington, DC. Small Business Innovation Research Programs.
NTIS Prices: PC A03/MF A01
Country of Publication: United States
Contract No.: NSF-ISI-8960202
Feasibility and evaluation studies for utilizing the pyroelectric response of polyvinylidene fluoride (PVDF) film demonstrated the potential utility of this concept as a general biosensor device. The design and fabrication of thin polymer film sensor elements, utilizing photolithographic etching and electrochemical polymerization as a means for immobilization, provided a model biosensor device which could be evaluated in a straight forward empirical manner. Using the enzyme glucose oxidase as a model for evaluation, methods for optimizing a protocol for electrochemical polymerization were developed and optimized including evaluation by cyclic voltammetry, determination of optimum monomer concentration, protein concentration and pH, as well as determination of incorporated enzyme activity and stability. The prototype devices demonstrated a linear response to glucose over a range of 5 to 500 mg percent with 0.0208 apparent enzyme activity units per square centimeter on the electrodes. Evaluation of the use of pyroelectric PVDF films in a differential thin film thermal conductivity/impedance assay for detecting direct protein-protein binding reactions provided confirmation of the ability to detect at least to ng/ml (equivalent) of a large molecular weight protein.

12/7/4 (Item 4 from file: 315)
DIALOG(R)File 315:ChemEng & Biotec Abs

347441 CEABA Accession No.: 25-11-018754 DOCUMENT TYPE: Journal
Title: DNA chips under development for sequencing applications.
AUTHOR: Borman, S.
JOURNAL: CHEMICAL AND ENGINEERING NEWS (WASHINGTON), Volume: 72, Issue: 23, Page(s): 24-25
CODEN: CENEAR ISSN: 00092347
PUBLICATION DATE: 6 Jun 1994 (940606) LANGUAGE: English
ABSTRACT: Researchers at Affymetrix, Santa Clara, CA, and its parent company, Affymax, in Palo Alto, CA, have developed a method for making high-density, miniaturized *DNA* chips containing *arrays* of hundreds or thousands of different *DNA* fragments, which may be useful in DNA sequencing by hybridization. The chips are produced by a light-directed synthesis technique in which a surface bearing protected hydroxyl groups is illuminated through a series of *photolithographic* masks to generate areas of free hydroxyl groups which are substituted by protected nucleosides.

12/7/5 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

11485816 PASCAL No.: 94-0323811
DNA electrodiffusion in a 2D *array* of posts
VOLKMUTH W D; DUKE T; WU M C; AUSTIN R H; SZABO Attila
Department of Physics, Princeton University, Princeton, New Jersey 08544;

APS 11/9/95

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=> s (capture binding or capture probe# or microspot# or binding pair# or
spot#) (p)(microsphere#)
         30029 CAPTURE
         78446 BINDING
            14 CAPTURE BINDING
                  (CAPTURE(W)BINDING)
         30029 CAPTURE
         56546 PROBE#
            88 CAPTURE PROBE#
                  (CAPTURE(W)PROBE#)

            65 MICROSPOT#
         78446 BINDING
        722557 PAIR#
           583 BINDING PAIR#
                  (BINDING(W)PAIR#)
         99072 SPOT#
          4998 MICROSPHERE#
L5          51 (CAPTURE BINDING OR CAPTURE PROBE# OR MICROSPOT# OR BINDING
 PA
               IR# OR SPOT#) (P)(MICROSPHERE#)
=> d l5 cit ab 1-51

1.  5,417,986, May 23, 1995, Vaccines against diseases caused by
enteropathogenic organisms using antigens encapsulated within
biodegradable-biocompatible microspheres; Robert H. Reid, et al.,
424/499, 422, 426, 433, 444, 455, 470, 486, 488, 489, 491 [IMAGE
AVAILABLE]

US PAT NO:     5,417,986 [IMAGE AVAILABLE]            L5: 1 of 51

ABSTRACT:
This invention is directed to oral parenteral and intestinal vaccines and
eir use against diseases caused by enteropathogenic organisms using
antigens encapsulated within biodegradable-biocompatible microspheres.
```

3. 5,288,502, Feb. 22, 1994, Preparation and uses of multi-phase microspheres; James W. McGinity, et al., 424/484, 488, 489, 490, 491; 428/402.2, 402.21, 402.22 [IMAGE AVAILABLE]

US PAT NO: 5,288,502 [IMAGE AVAILABLE] L5: 3 of 51

ABSTRACT:
Multi-phase polymeric microspheres containing a molecular compound dispersed in a polymeric matrix are described. Methods for preparing the multi-phase microspheres are also described, which includes a multiple emulsion solvent evaporation technique. Drug loading efficiencies between 80 to 100% were achieved using the described methods. Particular ratios of the W/O emulsion to polymer, and concentration of surfactant and dispersion media (mineral oil) provide highly efficient multi-phase microspheres. In particular embodiments, the multi-phase microspheres feature a high loading efficiency of water-soluble drugs, and also eliminates partitioning of the water soluble agent into the polymer acetonitrile (solvent) phase, thus preventing low encapsulation efficiency. The described multi-phase microspheres possess efficient drug loading, release properties, and drug stability, and also provide a vehicle for long term therapeutic release of a biologically active molecule for therapeutically effective periods of time. Molecular compounds which may be incorporated within the multi-phase microspheres include both water-soluble and water-insoluble drugs, proteins (e.g. TNF), peptides, and chemicals. The molecular compound is protected within an oily droplet, and contact with polymer, surfactant, organic solvents, and other potentially denaturing agents is prevented.

7. 5,155,138, Oct. 13, 1992, Expandable thermoplastic microspheres and process for the production and use thereof; Jorgen Lundqvist, 521/76, 59, 135, 139, 140, 145, 146, 147, 149; 523/210; 524/827, 834 [IMAGE AVAILABLE]

US PAT NO: 5,155,138 [IMAGE AVAILABLE] L5: 7 of 51

ABSTRACT:
A method for producing expandable thermoplastic microspheres by polymerisation in a reaction vessel of an ethylenically unsaturated monomer or a mixture of monomers in an aqueous suspension in the presence of a condensed propellant. In the method, the monomer or monomer mixture is suspended in the aqueous medium in the presence of a powder stabilizer which consists of a salt or hydroxide of any of the metals Ca, Mg, Ba, Fe, Zn, Ni or Mn. The powder stabilizer is insoluble in the aqueous medium at the pH the aqueous medium has at the polymerisation. The aqueous medium has at the polymerization. The aqueous medium may also contain a co-stabilizer. The method further comprises the step of washing off the powder stabilizer from the microspheres after the polymerization by lowering the pH of the aqueous medium by the addition of acid. Alternatively, amphoteric hydroxides can also be dissolved by a pH increase. The invention also relates to microspheres produced according to the method of the invention, and to the use thereof.

9. 5,104,791, Apr. 14, 1992, Particle counting nucleic acid hybridization assays; Scot D. Abbott, et al., 435/6; 436/501; 536/24.32; 935/77, 78 [IMAGE AVAILABLE]

US PAT NO: 5,104,791 [IMAGE AVAILABLE] L5: 9 of 51

ABSTRACT:
An improved nucleic acid hybridization assay, relying on particle counting, is provided. Presence and quantity of target nucleic acid is determined by detecting, upon hybridization, signals associated with particle aggregation or coincident signals from particles and reporters.

15. 4,962,023, Oct. 9, 1990, Single incubation immuno sorbent assay method using particle labels to detect test antigen specific antibodies in presence of other antibodies; William J. Todd, et al., 435/7.92, 7.93; 436/518, 524, 527, 528, 529, 530, 531, 540, 547, 800, 801, 804, 808, 828 [IMAGE AVAILABLE]

US PAT NO: 4,962,023 [IMAGE AVAILABLE] L5: 15 of 51

ABSTRACT:
An immunoassay method for one-step detection of specific antibodies which includes incubation of a solid phase support or matrix having a spot of the antigen bound thereto with a sample of the clinical fluid to be tested in the presence of a signal developing reagent, including a detector substance, which is preferably a colloidal metal sol, and a ligand, such as protein A or other antibody binding ligand. A diagnostic field kit containing the test antigens and signal developing reagent is also described.

16. 4,943,355, Jul. 24, 1990, Improved process for producing uniformly plated microspheres; James A. Patterson, 205/151, 184, 205; 427/222, 306, 443.1 [IMAGE AVAILABLE]

US PAT NO: 4,943,355 [IMAGE AVAILABLE] L5: 16 of 51

ABSTRACT:
Cross-linked polymer microspheres are carefully separated into fractions of equal size and density by first using sieves and then using hydraulic separation in a cone. Each fraction is separately plated with copper. The copper plated microspheres are again separated into fractions of equal size and density. Each fraction is then given an additional metal plating. The thus plated microspheres have uniformly thick plating and have a maximized surface area for the amount of metal plated making them particularly useful as catalysts or in electrical products or processes. Microspheres having a plating of palladium exhibit a marked improvement in the adsorption of hydrogen both quantitatively and in rapidity.

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show files
File 344:Chinese Patents Abs Apr 1985-1995/May
         (c) 1995 European Patent Office
File 347:JAPIO OCT 1976-1995/JAN.
         (c) JPO & JAPIO
File 348:European Patents 1978-1995/May W4
         (c) 1995 European Patent Office
File 350:Derwent World Pat. 1963-1980/UD=9516
         (c) 1995 Derwent Info Ltd
File 351:DERWENT WPI 1981-1995/UD=9520;UA=9515;UM=9511
         (c)1995 Derwent Info Ltd
File 357:Derwent Biotechnology Abs 1982-1995/Jun B1
         (c) 1995 Derwent Publ Ltd
?ds

Set      Items   Description
S1         621   CAPTUR?(3N)(BIND? OR BOUND? OR BOND? OR AGENT?)
S2      124000   OLIGONUCLEOTIDE? OR POLYNUCLEOTIDE? OR PROTEIN? OR (OLIGO -
              OR POLY)()NUCLEOTIDE?
S3        9297   S2(5N)(POLYMER? ? OR COPOLYMER?  OR HOMOPOLYMER? OR TERPOL-
             YMER? OR RESIN? OR GUM? OR PROBE? OR PARTICLE? OR PARTICULATE?
              OR S1 OR BIOPROBE? OR MICROPARTIC? OR MACROPARTIC? OR MICROP-
             ROB? OR MACROPROB?)
S4      129989   MICROSPHER? OR MICROCHIP? OR BIOCHIP? OR MICROASSAY? OR MI-
             CROSPOT? OR MICROGLOB? OR (MICRO OR SUPER)()(CHIP? OR ASSAY? -
             OR SPOT? OR GLOB? OR ARRAY?) OR ARRAY? OR SUPERCHIP? OR ASSAY?
              OR MICROARRAY?
S5         141   S4(7N)(LATEX? OR (FLUORESCEN? OR REFLECT?)(3N)DYE?)
S6        2759   S4(7N)(DNA? OR PROTEIN?)
S7       28733   LITHOG? OR PHOTOLITHOG? OR TYPOLITHOG? OR LITHOPHOTOG? OR -
             PLANOGRA? OR AUTOLITHOG? OR CHROMOLITHOG?
S8          24   S7 AND (S3 OR S5 OR S6)
?t8/6/all

 8/6/1     (Item 1 from file: 347)
04558676
*PLANOGRAPHIC* PRINTING PLATE


 8/6/2     (Item 2 from file: 347)
04321673
*PLANOGRAPHIC* PRINTING PLATE


 8/6/3     (Item 3 from file: 347)
04273516
*PLANOGRAPHIC* PRINTING FORM


 8/6/4     (Item 1 from file: 348)
00683444
  Imaging  element  comprising a photopolymerizable composition and methods
    for producing *lithographic* plates therewith.
LANGUAGE (Publication,Procedural,Application): English; English; English
WORD COUNT: 96


 8/6/5     (Item 2 from file: 348)
00657157
WORD COUNT: 118
```

8/6/6 (Item 3 from file: 348)
00428357
Lithographic aluminium offset printing plate made according to the DTR-process.
LANGUAGE (Publication,Procedural,Application): English; English; English
WORD COUNT: 119

8/6/7 (Item 1 from file: 350)
000633838 WPI Acc No: 68-79941P/00
XRAM Acc No: C68-P79941
Coating paper with pigmented protein contng oil-in

8/6/8 (Item 2 from file: 350)
000605359 WPI Acc No: 68-37792Q/00
XRAM Acc No: C68-Q37792
Photolithographic compositions containing proteins

8/6/9 (Item 1 from file: 351)
010136711 WPI Acc No: 95-037962/06
XRAM Acc No: C95-017028
XRPX Acc No: N95-030024
Diffusion transfer imaging element used for prepn. of *lithographic* printing plate - has hardened hydrophilic layer contg. hydrophilic synthetic polymer hardened with hydrolysed tetraalkyl orthosilicate and receiving, intermediate and photosensitive layers on flexible support, gives plate with good printing properties

8/6/10 (Item 2 from file: 351)
009668735 WPI Acc No: 93-362287/46
XRAM Acc No: C93-160532
XRPX Acc No: N93-279694
Planographic printing plate for prodn. of prints having improved sharpness - has overcoat layer contg. non-*protein* based hydrophilic *polymer* e.g. PVA, on top of plate

8/6/11 (Item 3 from file: 351)
009567296 WPI Acc No: 93-260844/33
XRAM Acc No: C93-115823
Baseplate prepn. for culturing cells - by painting photoresist on baseplate, adsorbing substances that influence cell adhesion percentage, and then dissolving photoresist

8/6/12 (Item 4 from file: 351)
009353274 WPI Acc No: 93-046753/06
XRAM Acc No: C93-021032
XRPX Acc No: N93-035831
Single chip deformable mirror device producing full colour image - has *array* of mirrors coated with resist *dye* layer individually *reflecting* red, blue or green light

8/6/13 (Item 5 from file: 351)

009040506 WPI Acc No: 92-167864/21
XRAM Acc No: C92-077268
XRPX Acc No: N92-126469 *Image available*
Manipulation of microscopically small dielectric particles - by exposure to shifting electric fields so that rate of movement of particles is slower than rate of shift of fields

8/6/14 (Item 6 from file: 351)
008526811 WPI Acc No: 91-030895/05
XRAM Acc No: C91-013186
XRPX Acc No: N91-023915
Photosensitive assemblage for *lithographic* printing plate - comprises aluminium substrate, silver halide emulsion and intermediate layer of non-*proteinic* hydrophilic *polymer*

8/6/15 (Item 7 from file: 351)
008230859 WPI Acc No: 90-117860/16
XRAM Acc No: C90-051756
XRPX Acc No: N90-091337 *Image available*
Electrically conductive layer for resist pattern formation - where layer providing compsn. comprises e.g. (semi)conducting polymer soluble in solvent and photo acid generator

8/6/16 (Item 8 from file: 351)
007167852 WPI Acc No: 87-164861/24
XRPX Acc No: N87-123621
Colour filter mfg. method for display arranging number of colour filter elements in given order on substrate by *photolithography* process

8/6/17 (Item 9 from file: 351)
007113681 WPI Acc No: 87-113678/16
XRAM Acc No: C87-047519
XRPX Acc No: N87-085124
Lithographic printing plate material for direct plate making process includes silica-alumina colloidal pigment, hydrophilic colloid contg. binder and crosslinking agent

8/6/18 (Item 1 from file: 357)
175670 DBA Accession No.: 95-02491
The chip of the 90s - *DNA* chip used to generate *DNA* probe *arrays* for e.g. human genome mapping, *DNA* sequencing, etc.

8/6/19 (Item 2 from file: 357)
171304 DBA Accession No.: 94-13855
Gray code masks for sequencing by hybridization - DNA sequencing by hybridization using two-dimensional Gray code mask mathematical model

8/6/20 (Item 3 from file: 357)
170678 DBA Accession No.: 94-13229
High-speed separation of antisense oligonucleotides on a micromachined capillary electrophoresis device - use in oligonucleotide antisense DNA purification or DNA sequencing

8/6/21 (Item 4 from file: 357)
165857 DBA Accession No.: 94-08408
'DNA chips' under development for sequencing application - preparation and use of DNA chip for DNA sequencing

8/6/22 (Item 5 from file: 357)
161585 DBA Accession No.: 94-04136
Industrial, pharmaceutical and cosmetic application for cultured plant cells - gum produced by Pyrus, Nicotiana, Phleum or Lolium cell culture

8/6/23 (Item 6 from file: 357)
154329 DBA Accession No.: 93-12381
Preparation of a carrier for cell culture - new quartz carrier for anchorage-dependent cells prepared by *photolithography* and having cell adhesion *protein* or *polymer* adsorbed on its surface

8/6/24 (Item 7 from file: 357)
137706 DBA Accession No.: 92-10198
Photolithographic immobilization of biopolymers on solid supports - *photolithography* application to e.g. nucleic acid immobilization on solid support for use in biosensor construction
?
?t8/7/11,13,18-24

8/7/11 (Item 3 from file: 351)
DIALOG(R)File 351:DERWENT WPI

009567296 WPI Acc No: 93-260844/33
XRAM Acc No: C93-115823
Baseplate prepn. for culturing cells - by painting photoresist on baseplate, adsorbing substances that influence cell adhesion percentage, and then dissolving photoresist
Patent Assignee: (NIDE) NEC CORP
Number of Patents: 001
Number of Countries: 001
Patent Family:

CC Number	Kind	Date	Week	
JP 5176753	A	930720	9333	(Basic)

Priority Data (CC No Date): JP 91357910 (911226)
Abstract (Basic): JP 05176753 A
New base plate for culturing cells by adhering one or a number of types of adhesive cells, has a surface part adsorbed with a substance influencing the cell adhesion % or adhesion form specifically. The substance is pref. cell adhesive *protein* e.g. collagen, fibronectin, laminin, vitronectin, or cell adhesive *polymer* e.g. poly-N-vinylbenzyl-D-lactone amide. The base plate pref. has number of surface parts adsorbed with different types of substances of different compsns., and adsorption amts., respectively.
Prepn. of the base plate is composed of repeating processes of (a) painting a photoresist on the base plate, and exposing a part of the surface of the base plate by removing a part of the photoresist on the surface of the plate with *photolithography* method, (b) to the base plate, substances that influence to cell adhesion % or cell

adhesion form specifically are adsorbed, and (c) photoresist of the base plate is dissolved.

USE/ADVANTAGE - Cells can be adsorbed at the optional position on the base plate, at optional cell adhesion % or cell forms, and can be cultured. Dwg. 0/8

Derwent Class: A89; B04; D16;
Int Pat Class: C12M-003/00; C12N-005/06

8/7/13 (Item 5 from file: 351)
DIALOG(R)File 351:DERWENT WPI

009040506 WPI Acc No: 92-167864/21
XRAM Acc No: C92-077268
XRPX Acc No: N92-126469 *Image available*

Manipulation of microscopically small dielectric particles - by exposure to shifting electric fields so that rate of movement of particles is slower than rate of shift of fields

Patent Assignee: (FRAU) FRAUNHOFER GES FOERDERUNG; (FRAU) FRAUNHOFER GES FOERDERUNG ANGEWANDTEN
Author (Inventor): BENECKE W; FUHR G; HAGEDORN R; MUELLER T; WAGNER B
Number of Patents: 005
Number of Countries: 016
Patent Family:

CC	Number	Kind	Date	Week	
DE	4034697	A	920514	9221	(Basic)
WO	9207657	A1	920514	9222	
DE	4034697	C	920903	9236	
EP	555252	A1	930818	9333	
JP	6501159	W	940210	9411	

Priority Data (CC No Date): DE 4034697 (901031)
Applications (CC,No,Date): JP 91516840 (911028); WO 91DE840 (911028); WO 91DE840 (911028); DE 4034697 (901031); EP 91918107 (911028); WO 91DE840 (911028)
Language: German
EP and/or WO Cited Patents: 3.Jnl.Ref; US 4390403; WO 9111262
Designated States
(National): JP; US
(Regional): AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LU; NL; SE; LI
Filing Details: JP06501159 Based on WO 9207657; EP0555252 Based on WO 9207657

Abstract (Basic): DE 4034697 A

Particles are suspended in a liq. or gel of low electrical conductivity and exposed to an electric field consisting of one or several high frequency fields moving in preselected directions, the rate of movement of the fields being many times greater than the rate of movement of the particles.

The particles are pref. transported electrically using non-uniform fields or mechanically using mechanical boundaries. The shift frequency of the electric fields is in the range 0.1 to 100 MHz and the amplitude of the applied voltage is between 10 power(-2) and 100 volts. The electrodes are e.g. formed in desired configurations on a substrate e.g. of semiconductor material (e.g. a silicon wafer), glass or ceramic. The electrodes are pref. of a chemically inert material such as Au and are structured e.g. using *photolithographic* techniques and formed by electrodeposition.

USE/ADVANTAGE - By suitable choice of electrode configuration and field direction, particles can be separated in relation to their

dielectric properties and held in a chosen configuration such as linear rows in chosen directions. The technique is useful in biotechnology and for molecular sepn.-, focussing- and microtransport techniques.
1/10

Abstract (DE): 9236 DE 4034697 C
Microscopically small, dielectric *particles*, e.g., biological cells, *proteins*, etc., are handled by being suspended in a liquid or gel of low electroconductivity and being exposed to an electrical field consisting of one or several high frequency fields moving in predetermined directions at a rate which is a multiple of the speed of particle motion. Frequency is 0.1-100 MHz and amplitude of applied voltage is 10 power(-2) - 100V.
ADVANTAGE - Flexible handling system.
Dwg.1/10

Derwent Class: D16; J04; L03; P41; S03;
Int Pat Class: B01D-057/02; B03C-005/02; C12M-001/00; G01N-015/00; G01N-027/30; G01N-027/447
Derwent Registry Numbers: 1694-U; 1966-U

8/7/18 (Item 1 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

175670 DBA Accession No.: 95-02491
The chip of the 90s - *DNA* chip used to generate *DNA* probe *arrays* for e.g. human genome mapping, *DNA* sequencing, etc.
AUTHOR: Bains W
CORPORATE AFFILIATE: PA-Consult.Group
CORPORATE SOURCE: PA Consulting Group, Cambridge Laboratory, Melbourn, Royston, Hertfordshire SG8 6DP, UK.
JOURNAL: Chem.Br. (31, 2, 122-25) 1995
ISSN: 0009-3106 CODEN: CHMBAY
LANGUAGE: English
ABSTRACT: DNA probes may be used in parallel probing strategies, where many probes are used to target a DNA at once. A *DNA* chip has been designed which generates *arrays* of probes immobilized on a surface, usually glass. In each cycle, separate reactions add A, C, G and T to the surface. These reactions are targeted to different parts of the surface, so that different bases are added onto chains in different regions. At the end of the cycle, the targeting mechanism is shifted and the reactions proceed, this time adding different bases to each growing chain. 2 Different approaches have been adopted for the targeting stage: mechanical masking and guiding reagents to the right part of the glass slides with rubber tubing; and use of photosensitive reagents and a *lithographic* technique to define where each base is to go. There are 4 general areas where large numbers of probes are used: genome mapping, especially the Human Genome Project; human genetics, especially DNA fingerprinting; genetic diagnostics; and DNA sequencing. Future challenges include the generation of chips with new nucleic acids, or inventing new ones targeted at the requirements of specific applications. (19 ref)

8/7/19 (Item 2 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

171304 DBA Accession No.: 94-13855
Gray code masks for sequencing by hybridization - DNA sequencing by

hybridization using two-dimensional Gray code mask mathematical model
AUTHOR: Feldman W; +Pevzner P
CORPORATE AFFILIATE: Univ.Pennsylvania-State Inst.Mol.Evol.Genet.
CORPORATE SOURCE: Department of Computer Science and Engineering, The Pennsylvania State University, University Park, Pennsylvania 16802, USA.
JOURNAL: Genomics (23, 1, 233-35) 1994
CODEN: GNMCEP
LANGUAGE: English
ABSTRACT: In light-directed synthesis of high-density oligonucleotide *arrays* for *DNA* sequencing by hybridization, most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall length of these borders in masks for *photolithographic* chip design. This approach may be used for minimizing the border length in very large-scale immobilized polymer synthesis. An added advantage of the Gray code masks for sequencing by hybridization is the forced localization of mismatch hybridization. In hybridization experiments, *probe*/target *oligonucleotide* pairs that are not perfectly complementary will also hybridize at lesser strength. With the Gray code masks, a perfect probe/target match will be surrounded by nearest neighbors that have single-base mismatches, which in turn are flanked by probe/target pairs having greater mismatches. As a result, the signal profile will resemble a mountain with the peak designating the location of the perfect match. (12 ref)

8/7/20 (Item 3 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

170678 DBA Accession No.: 94-13229
High-speed separation of antisense oligonucleotides on a micromachined capillary electrophoresis device - use in oligonucleotide antisense DNA purification or DNA sequencing
AUTHOR: Effenhauser C S; Paulus A; Manz A; Widmer H M
CORPORATE AFFILIATE: CIBA-Geigy
CORPORATE SOURCE: Corporate Analytical Research, Ciba Ltd., CH-4002 Basel, Switzerland.
JOURNAL: Anal.Chem. (66, 18, 2949-53) 1994
CODEN: ANCHAM
LANGUAGE: English
ABSTRACT: A synthetic mixture of fluorescent phosphorothioate antisense oligonucleotides 10-25 bases in length was separated very rapidly by size using a micromachined capillary electrophoresis device. The device consisted of a channel system formed on a glass plate surface by a *photolithographic* process. An integrated volume-defined sample injector allowed unbiased electrokinetic introduction of sample plugs of 150 um length (sample volume 90 pl) into the separation channel. This well-defined injection procedure, with use of high electric fields of up to 2,300 V/cm, allowed size separation of single-stranded oligonucleotides in less than 45 sec, using a separation distance of 3.8 cm. Column efficiencies of up to 200,000 theoretical plates with an associated plate height of 0.2 um were obtained. Fast repetitive sample injection and analysis were possible, with excellent reproducibility for both migration time (less than 0.06%) and peak height (less than 1.7%). This method should also be important in DNA sequencing, and in on-line analysis of synthetic and natural *oligonucleotides* or other

biopolymers. (28 ref)

8/7/21 (Item 4 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

165857 DBA Accession No.: 94-08408
'DNA chips' under development for sequencing application - preparation and use of DNA chip for DNA sequencing
AUTHOR: Borman S
CORPORATE SOURCE: (Publ. Address) American Chemical Society, 1155 Sixteenth Street N.W., Washington D.C. 20036, USA.
JOURNAL: Chem.Eng.News (72, 23, 24-25) 1994
CODEN: CENEAR
LANGUAGE: English
ABSTRACT: High-density, miniaturized *DNA* chips contain *arrays* of 100s or 1,000s of different *DNA* fragments. A light-directed synthetic technique is used to produce the chips. A surface bearing protected hydroxyls is illuminated through a *photolithographic* mask, generating free hydroxyl groups in exposed regions. The hydroxyl groups are then substituted by protected nucleoside. A new mask pattern is applied and the surface is again illuminated, yielding a new set of free hydroxyls, and a second protected nucleoside is substituted in. These steps are repeated until the desired set of products is obtained. The technology can potentially be used to implement a new form of DNA sequencing technology. In sequence analysis by hybridization, a set of short *oligonucleotide* *probes* of defined sequence is used to identify complementary sequences on a longer target strand of DNA. Using a DNA chip, a single experiment can be used to identify many complementary sites on target DNA. Other potential applications include resolving sequence ambiguities, rapid detection of DNA mutational events, genetic diagnostic testing and pathogen testing. (0 ref)

8/7/22 (Item 5 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

161585 DBA Accession No.: 94-04136 PATENT
Industrial, pharmaceutical and cosmetic application for cultured plant cells - gum produced by Pyrus, Nicotiana, Phleum or Lolium cell culture
PATENT ASSIGNEE: Bio-Polymers: CSIRO 1994
PATENT NUMBER: WO 9402113 PATENT DATE: 940203 WPI ACCESSION NO.: 94-048495 (9406)
PRIORITY APPLIC. NO.: US 920688 APPLIC. DATE: 920728
NATIONAL APPLIC. NO.: WO 93AU376 APPLIC. DATE: 930727
LANGUAGE: English
ABSTRACT: An improved industrial, pharmaceutical or cosmetic manufacturing process is claimed which involves a step including an agent selected from viscosifying, thickening, gelling, emulsifying, suspending, stabilizing, encapsulating, flocculating, film-forming, sizing, adhesive, binding, coating, lubricating, water-retention and/or coagulating agents, where the improvement comprises use of a cultured plant cell gum (I) as the agent. Also claimed is a composition produced by the new process, comprising (I) for use in the paper, adhesive, oil and gas, ink, *lithography* , textile, paint, ceramics, cleaning detergents, cosmetics, photography, explosive, fire-fighting and agricultural industries. Industrial and cosmetic compositions containing (I) are also described. Also claimed is a method for making

a cultured Pyrus or Nicotiana plant cell gum, which involves culturing Pyrus or Nicotiana plant cells on a medium containing 80-200 g/l Brewers Liquid Maltose as a C-source, and recovering the resulting *gum*. Preferably, the arabinogalactan *protein* content of (I) is at least 4 wt.%, and (I) is produced by Pyrus, Nicotiana, Phleum or Lolium cells. (82pp)

8/7/23 (Item 6 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

154329 DBA Accession No.: 93-12381 PATENT
Preparation of a carrier for cell culture - new quartz carrier for anchorage-dependent cells prepared by *photolithography* and having cell adhesion *protein* or *polymer* adsorbed on its surface
PATENT ASSIGNEE: NEC 1993
PATENT NUMBER: JP 5176753 PATENT DATE: 930720 WPI ACCESSION NO.: 93-260844 (9333)
PRIORITY APPLIC. NO.: JP 91357910 APPLIC. DATE: 911226
NATIONAL APPLIC. NO.: JP 91357910 APPLIC. DATE: 911226
LANGUAGE: Japanese
ABSTRACT: A new carrier for cell culture of 1 or more cell types has a surface containing a substance (cell adhesive *protein* e.g. collagen, fibronectin, laminin, vitronectin, or a cell adhesive *polymer* e.g. poly-N-vinylbenzyl-D-lactone amide) influencing the cell adhesion percentage or adhesion form. The carrier preferably has several surfaces which have adsorbed different substances or different concentrtions of a substance. The carrier is prepared by: (1) painting photoresist onto the base plate and part of the surface of the base plate is exposed by removing part of the photoresist on the surface of the plate by *photolithography*; (2) adsorbing substances influencing cell adhesion % or cell adhesion into the base plate; and (3) dissolving the photoresist of the base plate. Steps (1) to (3) may be repeated. Cells may be adsorbed at the optimal position on the base plate, for subsequent cell culture. In an example, a carrier was made from a quartz base plate (1) with adsorbed collagen (4). (9pp)

8/7/24 (Item 7 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

137706 DBA Accession No.: 92-10198
Photolithographic immobilization of biopolymers on solid supports - *photolithography* application to e.g. nucleic acid immobilization on solid support for use in biosensor construction
AUTHOR: Rozsnyai L F; Benson D R; Fodor S P A; Schultz P G
CORPORATE AFFILIATE: Affymax
CORPORATE SOURCE: Department of Chemistry, University of California, Berkeley, CA 94720, USA.
JOURNAL: Angew.Chem.Int.Ed.Engl. (31, 6, 759-61) 1992
CODEN: ACIEAY
LANGUAGE: English
ABSTRACT: *Proteins* can be immobilized on surfaces in spatially defined *arrays* by the use of photoaffinity labels and *photolithography* (I). Benzophenone was chosen as crosslinking agent because of its chemical stability, relatively low energy absorption and high efficiency in photochemical crosslinking. Silica substrates were derivatized with t-butyloxycarbonyl-protected 3-aminopropyltriethoxysilane, deprotected

with 50% trifluoroacetic acid/CH2Cl2, and washed with ethyldiisopropylamine/CH2Cl2, dimethylformamide, CH2Cl2, and ethanol. The N-hydroxysuccinimide ester of 3-benzoylbenzoic acid was then coupled to the aminopropylated glass. After washing, the free NH2 groups were capped using acetic anhydride/dimethylaminopyridine. The coupling efficiency of benzoylbenzoic acid was 80%. (I) should be generally applicable to a wide range of biopolymers with a variety of functional groups e.g. nucleic acids. Development of site-selective photoactive or photocaged crosslinking reagents should aid construction of spatially defined arrays of biomolecules for general use in developing novel biosensors or parallel ligand-binding assays. (13 ref)

?

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S7      28733   LITHOG? OR PHOTOLITHOG? OR TYPOLITHOG? OR LITHOPHOTOG? OR -
             PLANOGRA? OR AUTOLITHOG? OR CHROMOLITHOG?

S9        224   S7 AND (SEQUENC? OR SBH)
S10         7   S9 AND HYBRID?
?
               7  S10
              24  S8
     S11       5  S10 NOT S8
??t11/6/all

 11/6/1     (Item 1 from file: 351)
008540843  WPI Acc No: 91-044906/07
XRAM Acc No: C91-019046
XRPX Acc No: N91-034947      *Image available*
    Polymeric nucleic acid to produce electronic networks - partic. for use
    as masks for *photolithographic* chip prodn. or to make switching
    elements


 11/6/2     (Item 2 from file: 351)
007873722  WPI Acc No: 89-138834/19
XRPX Acc No: N89-106033      *Image available*
    Complete photoresist removal from semiconductor wafer - applying high
    intensity beam irradiation for harmless photoresist removal, with
    variable beam cross-section


 11/6/3     (Item 3 from file: 351)
007431402  WPI Acc No: 88-065337/10
XRPX Acc No: N88-049490
    Aligning pattern on chip for mfg. integrated circuits by *lithography*
    - sequentially focussing electron beam on chip markings while chip is
    held stationary to determine number of focussing parameters


 11/6/4     (Item 4 from file: 351)
007066720  WPI Acc No: 87-066717/10
XRAM Acc No: C87-027770
XRPX Acc No: N87-050647
    Ghost image-generating *photolithographic* material contg. substrate,
    photo-structurable negatively working adhesive and self-supporting
    photocrosslinkable polyimide film; STRUCTURE


 11/6/5     (Item 1 from file: 357)
117226  DBA Accession No.: 91-04868
DNA chip construction for computer - using single-stranded or
    double-stranded DNA-protein complexes
?
t11/7/1,5

 11/7/1     (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI
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008540843  WPI Acc No: 91-044906/07
XRAM Acc No: C91-019046
XRPX Acc No: N91-034947      *Image available*
    Polymeric nucleic acid to produce electronic networks - partic. for use
```

as masks for *photolithographic* chip prodn. or to make switching elements

Patent Assignee: (HOLL/) HOLLENBERG C P; (DIMA/) DIMAURO E
Author (Inventor): HOLLENBERG C P; MAURO E; DIMAURO E
Number of Patents: 004
Number of Countries: 012
Patent Family:

CC Number	Kind	Date	Week	
DE 3924454	A	910207	9107	(Basic)
JP 3142882	A	910618	9130	
DE 3924454	C	920227	9209	
EP 491059	A1	920624	9226	

Priority Data (CC No Date): DE 3924454 (890724)
Applications (CC,No,Date): JP 90196050 (900724)
Language: English
EP and/or WO Cited Patents: 3.Jnl.Ref; DE 3924454; US 4103064
Designated States (Regional): AT; BE; CH; DE; DK; FR; GB; IT; LI; NL; SE

Abstract (Basic): DE 3924454

The use of polymeric double- or single-stranded nucleic acid (A) to construct or produce electronic networks (DNA chips) is new.

Pref. (A) is RNA and/or DNA, and have (1) a specific orientation; (2) specific single-stranded regions, defined by position, length and *sequence* compsn.; (3) multiple branching points and (4) specific sites.

Pref. (A) can be complexed with ligands (e.g. metal ions, intercalating agents or proteins) as electrical ligands. Preformed elements are used for particular parts of the network and are incorporated by specific *hybridisation* at specific binding points. A matrix of foundation of DNA; DNA/protein; DNA/RNA or DNA/RNA/protein may include other materials such as GaAs (opt. n-doped). USE/ADVANTAGE - (A), or their complexes, are useful as masks (or to construct masks) for *photolithographic* prodn. of computer chips. The self-assembly properties of (A) can be exploited to produce switching elements for chips. @(5pp Dwg.No.1/2)@

Abstract (DE): 9209 DE 3924454

Mol micro-network comprises double- and/or single/stranded nucleic acid molecules, i.e. synthesised and/or *hybridised* DNA and/or RNA with defined units, positions, *sequences*, lengths and orientations, immobilised on a substrate by crosslinking through a gamma- or lac-repressor protein to a carrier substrate. *Photolithography* is used for the prodn. of masks for forming specific patterns on the chip substrate.

USE - Used for electronic networks (chips). @(6pp

Derwent Class: D16; L03; U11; U12; P84; R46;
Int Pat Class: C07H-021/04; C07K-015/00; G03F-001/00; G06F-015/80; H01L-021/32; H01L-021/70; H01L-029/28; H01L-049/00

11/7/5 (Item 1 from file: 357)
DIALOG(R)File 357:Derwent Biotechnology Abs

117226 DBA Accession No.: 91-04868 PATENT
DNA chip construction for computer - using single-stranded or double-stranded DNA-protein complexes
PATENT ASSIGNEE: Hollenberg C P 1991
PATENT NUMBER: DE 3924454 PATENT DATE: 910207 WPI ACCESSION NO.: 91-044906 (9107)

PRIORITY APPLIC. NO.: DE 3924454 APPLIC. DATE: 890724
NATIONAL APPLIC. NO.: DE 3924454 APPLIC. DATE: 890724
LANGUAGE: German
ABSTRACT: The use of polymeric double stranded or single stranded nucleic acid to construct or produce electronic networks (DNA chips) is new. The nucleic acid is DNA and/or RNA with (1) a specific orientation, (2) specific single-stranded regions defined by position, length and *sequence*, (3) multiple branching points, and (4) specific sites. The nucleic acid can be complexed with ligands, e.g metal ions, intercalating agents or proteins, as electrical ligands. Preformed elements are used for particular parts of the network and are incorporated by specific *hybridization* at specific binding points. A matrix or foundation of DNA, DNA/protein, DNA/RNA or DNA/RNA/protein may include other materials such as GaAs (optionally n-doped). The nucleic acid and complexes are useful as masks or for the construction of masks for *photolithographic* production of computer chips. The self-assembly properties of the nucleic acid can be exploited to produce switching elements for chips. The DNA/protein complex can be bonded to other compounds or surfaces using appropriate antibodies, or used to alter local electrical conductivity properties. (5pp)
?save temp ree800
Temp SearchSave "TDREE800" stored
?

```
=> d query l12
L1          452 SEA FILE=HCA CAPTUR?(3A)(BIND? OR BOUND? OR BOND?)
L2          240 SEA FILE=HCA CAPTUR?(3A)AGENT?
L3        17511 SEA FILE=HCA (POLYMER# OR COPOLYMER# OR HOMOPOLYMER# OR T
                ERPOLYMER# OR RESIN? OR GUM? OR PROBE? OR PARTICLE? OR PA
                RTICULATE? OR L1 OR L2)(5A)(OLIGONUCLEOTIDE? OR POLYNUCLE
                OTIDE? OR PROTEIN? OR (OLIGO OR POLY)(W)NUCLEOTIDE?)
L4          215 SEA FILE=HCA (MICROSPHER? OR MICROCHIP? OR BIOCHIP? OR MI
                CROASSAY? OR MICROSPOT? OR MICROGLOB? OR MICRO(W)(CHIP# O
                R ASSAY? OR SPOT# OR GLOB?))(5A)(LATEX? OR (FLUORESCEN? O
                R REFLECT?)(3A)DYE#)
L5        219369 SEA FILE=HCA MICROSPHER? OR MICROCHIP? OR BIOCHIP? OR MIC
                ROASSAY? OR MICROSPOT? OR MICROGLOB? OR MICRO(W)(CHIP# OR
                 ASSAY? OR SPOT# OR GLOB?) OR ASSAY? OR SUPERCHIP? OR SUP
                ER(W)CHIP?
L6        17328 SEA FILE=HCA L5(7A)(DNA# OR PROTEIN?)
L7          843 SEA FILE=HCA (MICROARRAY? OR ARRAY?)(7A)(DNA# OR PROTEIN?
                )
L8        24907 SEA FILE=HCA ?LITHOG? OR PLANOGRAPH?
L12          13 SEA FILE=HCA L8 AND (L3 OR L4 OR L6 OR L7)

=> d ti l12 1-13

L12  ANSWER (1) OF 13  HCA  COPYRIGHT 1995 ACS
TI   Imaging biomolecule arrays by atomic force microscopy

L12  ANSWER (2) OF 13  HCA  COPYRIGHT 1995 ACS
TI   Ultra-high-speed DNA fragment separations using
     microfabricated capillary array electrophoresis chips

L12  ANSWER (3) OF 13  HCA  COPYRIGHT 1995 ACS
TI   Light-generated oligonucleotide arrays for rapid
   DNA sequence analysis

L12  ANSWER (4) OF 13  HCA  COPYRIGHT 1995 ACS
TI   DNA electrodiffusion in a 2D array of posts

L12  ANSWER (5) OF 13  HCA  COPYRIGHT 1995 ACS
TI   Electrical method and apparatus with multiple test sites for
     biochemical analysis

L12  ANSWER (6) OF 13  HCA  COPYRIGHT 1995 ACS
TI   DNA electrophoresis in microlithographic
   arrays

L12  ANSWER 7 OF 13  HCA  COPYRIGHT 1995 ACS
TI   Lithographic aluminum offset printing plate made according
     to the DTR-process

L12  ANSWER (8) OF 13  HCA  COPYRIGHT 1995 ACS
TI   Wholly microfabricated biosensors, and manufacture and use thereof
```

L12 ANSWER 9 OF 13 HCA COPYRIGHT 1995 ACS
TI Biochips (biochemical electronic devices)

L12 ANSWER 10 OF 13 HCA COPYRIGHT 1995 ACS
TI Water and solvent resistant coated paper

L12 ANSWER 11 OF 13 HCA COPYRIGHT 1995 ACS
TI Cytospectrometers for subcellular particles and macromolecules: design considerations

L12 ANSWER 12 OF 13 HCA COPYRIGHT 1995 ACS
TI **Lithographic** color

L12 ANSWER 13 OF 13 HCA COPYRIGHT 1995 ACS
TI Printable paper product having a cellular coating containing pigment and a reaction product of **protein** and an epoxy **resin** defining the cell walls

=> d cbib abs l12 1-6,8-9,11

L12 ANSWER 1 OF 13 HCA COPYRIGHT 1995 ACS
122:260224 Imaging biomolecule arrays by atomic force microscopy. Mazzola, Laura T.; Fodor, Stephen P. A. (Affymetrix, Santa Clara, CA, 95051, USA). Biophys. J., 68(5), 1653-60 (English) 1995. CODEN: BIOJAU. ISSN: 0006-3495.
AB The authors describe here a method for constructing ordered mol. arrays and for detecting binding of biomols. to these arrays using at. force microscopy (AFM). These arrays simplify the discrimination of surface-bound biomols. through the spatial control of ligand presentation. First, **photolithog**. is used to spatially direct the synthesis of a matrix of biol. ligands. A high-affinity binding partner is then applied to the matrix, which binds at locations defined by the ligand array. AFM is than used to detect the presence and organization of the high-affinity binding partner. Streptavidin-biotin arrays of 100.times.100 .mu.m and 8.times.8 .mu.m elements were fabricated by this method. Contact and noncontact AFM images reveal a dense lawn of streptavidin specific to the regions of biotin derivatization. These protein regions are characterized by a height profile of .apprx.40 .ANG. over the base substrate with a 350-nm edge corresponding to the diffraction zone of the **photolithog**. High resoln. scans reveal a granular topog. dominated by 300 .ANG. diam. features. The ligand-bound protein can then be etched from the substrate using the AFM tip, leaving and 8 .ANG. shelf that probably corresponds to the underlying biotin layer.

L12 ANSWER 2 OF 13 HCA COPYRIGHT 1995 ACS
122:47745 Ultra-high-speed **DNA** fragment separations using microfabricated capillary **array** electrophoresis chips. Woolley, Adam T.; Mathies, Richard A. (Dep. of Chemistry, Univ. of

California, Berkeley, CA, 94720, USA). Proc. Natl. Acad. Sci. U. S. A., 91(24), 11348-52 (English) 1994. CODEN: PNASA6. ISSN: 0027-8424.

AB Capillary electrophoresis arrays have been fabricated on planar glass substrates by **photolithog**. masking and chem. etching techniques. The **photolithog**. defined channel patterns were etched in a glass substrate, and then capillaries were formed by thermally bonding the etched substrate to a second glass slide. High-resoln. electrophoretic sepns. of .vphi.X174 Hae III DNA restriction fragments have been performed with these chips using a hydroxyethyl cellulose sieving matrix in the channels. DNA fragments were fluorescently labeled with dye in the running buffer and detected with a laser-excited, confocal fluorescence system. The effects of variations in the elec. field, procedures for injection, and sizes of sepn. and injection channels (ranging from 30 to 120 .mu.m) have been explored. By use of channels with an effective length of only 3.5 cm, sepns. of .vphi.X174 Hae III DNA fragments from .apprxeq.70 to 1000 bp are complete in only 120 s. The authors have also demonstrated high-speed sizing of PCR-amplified HLA-DQ.alpha. alleles. This work establishes methods for high-speed, high-throughput **DNA** sepns. on capillary **array** electrophoresis chips.

L12 ANSWER 3 OF 13 HCA COPYRIGHT 1995 ACS

121:100749 Light-generated oligonucleotide **arrays** for rapid **DNA** sequence analysis. Pease, Ann Caviani; Solas, Dennis; Sullivan, Edward J.; Cronin, Maureen T.; Holmes, Christopher P.; Fodor, Stephen P. A. (Affymetrix, Santa Clara, CA, 95051, USA). Proc. Natl. Acad. Sci. U. S. A., 91(11), 5022-6 (English) 1994. CODEN: PNASA6. ISSN: 0027-8424.

AB In many areas of mol. biol. there is a need to rapidly ext. and analyze genetic information; however, current technologies for DNA sequence anal. are slow and labor intensive. The authors report here how modern **photolithog**. techniques can be used to facilitate sequence anal. by generating miniaturized arrays of densely packed **oligonucleotide probes**. These probe **arrays**, or **DNA** chips, can then be applied to parallel DNA hybridization anal., directly yielding sequence information. In a preliminary expt., a 1.28 .times. 1.28 cm array of 256 different octanucleotides was produced in 16 chem. reaction cycles, requiring 4 h to complete. The hybridization pattern of fluorescently labeled oligonucleotide targets was then detected by epifluorescence microscopy. The fluorescence signals from complementary probes were 5-35 times stronger than those with single or double base-pair hybridization mismatches, demonstrating specificity in the identification of complementary sequences. This method should prove to be a powerful tool for rapid investigations in human genetics and diagnostics, pathogen detection, and DNA mol. recognition.

L12 ANSWER 4 OF 13 HCA COPYRIGHT 1995 ACS

121:53348 **DNA** electrodiffusion in a 2D **array** of posts. Volkmuth, W. D.; Duke, T.; Wu, M. C.; Austin, R. H.; Szabo, Attila (Dep. of Phys., Princeton Univ., Princeton, NJ, 08544, USA). Phys. Rev. Lett., 72(13), 2117-20 (English) 1994. CODEN: PRLTAO. ISSN: 0031-9007.

AB The authors consider some of the fundamental statistical mechanics of the electrodiffusion of a long polyelectrolyte, **DNA**, in a **microlithog**. constructed 2-dimensional rectangular **array** of cylindrical posts. The DNA polymer is shown to be free draining when not hooked on a post, and the mean time to unhook is explicitly calcd. and compared to the authors' measurements.

L12 ANSWER 5 OF 13 HCA COPYRIGHT 1995 ACS

119:24120 Electrical method and apparatus with multiple test sites for biochemical analysis. Eggers, Mitchell D.; Hogan, Michael E.; Beattie, Kenneth Loren; Shumaker, John; Ehrlich, Daniel J.; Hollis, Mark (Houston Advanced Research Center, USA; Massachusetts Institute of Technology; Baylor College of Medicine). Eur. Pat. Appl. EP 543550 A1 930526, 16 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE. (English). CODEN: EPXXDW. APPLICATION: EP 92-310253 921110. PRIORITY: US 91-794036 911119.

AB A sample for anal. is applied to a plurality of test sites, each site contg. a mol. probe which can bind to an assocd. target mol. structure; after applying an elec. signal to the test sites, their elec. properties are detd. to see which probes have bound target mols. A plurality of different targets can be detd. simultaneously. The **probe** may be an **oligonucleotide**, antibody, antiidiotypic antibody, peptide, etc. The elec. property may be dielec. const., relaxation frequency, or dispersion. The sites may be wells formed by **photolithog**. in a semiconductor wafer. Detection and recognition circuitry for DNA sequencing is described.

L12 ANSWER 6 OF 13 HCA COPYRIGHT 1995 ACS

117:127655 **DNA** electrophoresis in **microlithographic arrays**. Volkmuth, W. D.; Austin, R. H. (Dep. Phys., Princeton Univ., Princeton, NJ, 08544, USA). Nature (London), 358(6387), 600-2 (English) 1992. CODEN: NATUAS. ISSN: 0028-0836.

AB Optical **microlithog**. was used to fabricate capped quasi-2-dimensional obstacle courses in SiO2. Reported here are observations using epifluorescence microscopy of the electrophoresis and length fractionation of large **DNA** mols. confined in **arrays**. Simple reptation theory, based on the work of P. deGennes (1991), predicts that at low elec. fields the electrophoretic mobility of a polymer of length L much greater than the persistence length p scales inversely with L (Lerman, L. S.; Frisch, H. L., 1982). But elongation of the coil in the matrix at sufficiently strong elec. fields results in a length-independent electrophoretic mobility. The application of suitably timed pulsed elec. fields restores the fractionating power of gels for long mols. but the protocols of pulsed-field electrophoresis are semi-empirical

because the complex and ill-understood gel matrix plays a crit. role in fractionation. **Microlithog**. constructed obstacle arrays, with their low dimensionality, small vol., and extremely reproducible topog., will make it possible to understand the motion and fractionation of large polymer mols. in complex but well characterized topologies.

L12 ANSWER 8 OF 13 HCA COPYRIGHT 1995 ACS
114:160323 Wholly microfabricated biosensors, and manufacture and use thereof. Cozzette, Stephen N.; Davis, Graham; Itak, Jeanne A.; Lauks, Imants R.; Mier, Randall M.; Piznik, Sylvia; Smit, Nicolaas; Steiner, Susan J.; Van der Werf, Paul; Wieck, Henry J. (I-Stat Corp., USA). PCT Int. Appl. WO 9005910 A1 900531, 195 pp. DESIGNATED STATES: W: JP, KR; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 89-US5227 891112. PRIORITY: US 88-270171 881114; US 89-381223 890713.
AB A microfabricated biosensor which may be uniformly mass produced comprises (a) a base sensor (e.g. an electrochem. transducer); (b) a permselective layer (e.g. a polymer film) optionally contg. an ionophore, superimposed over at least part of layer (a) and sufficiently thick to pass mols. of mol. wt. .ltoreq.50 and exclude mols. of mol. wt. .gtoreq.120; and (c) a biolayer covering at least part of layer (b). The biolayer comprises (i) a bioactive mol. which selectively interacts with an analyte and (ii) a support matrix derived from a photoformable proteinaceous mixt. and/or a film-forming latex through which the analyte can permeate. An electrolyte layer may be interposed between layers (a) and (b). Layer (c) may addnl. be covered by a layer which attenuates analyte transport and a photoresist cap. Layer (b) prevents electroactive interfering species from undergoing redox reactions at the indicator electrode. Methods for conducting assays (e.g. immunoassays) using the sensors are described. Thus, the base sensor for a glucose sensor comprised an array of unit cells on a Si wafer; each unit cell consisted of an Ag/AgCl ref./counter electrode and 2 Ir catalytic electrodes prepd. by plasma deposition or sputtering and std. **lithog**. techniques including spin-coating with a pos. photoresist. Layer (b) was prepd. by spin-coating an alc. soln. of N-(2-aminoethyl)-3-aminopropyltrimethoxysilane onto the wafer and baking. Layer (c) was prepd. from a mixt. of fish gelatin and ferric ammonium citrate (photoinitiator) to which were added glucose oxidase, crosslinking agent (N,N'-methylenebisacrylamide), and a sugar alc. (to alter the porosity). An attenuation layer contained dimethylsiloxane-bisphenol A carbonate copolymer.

L12 ANSWER 9 OF 13 HCA COPYRIGHT 1995 ACS
104:164513 Biochips (biochemical electronic devices). Okamoto, Masayoshi; Wada, Moriyasu (Res. Dev. Cent., Toshiba Corp., Kawasaki, 210, Japan). Kagaku to Kogyo (Tokyo), 37(3), 170-2 (Japanese) 1984. CODEN: KAKTAF. ISSN: 0022-7684.
AB A review with 5 refs. about **lithog**. techniques for proteins, mol. switching, superfine logic, and biocomputers.

L12 ANSWER 11 OF 13 HCA COPYRIGHT 1995 ACS
90:83179 Cytospectrometers for subcellular particles and macromolecules: design considerations. McCormick, B. H.; Amendola, R. C. (Dep. Inf. Eng., Univ. Illinois, Chicago, Ill., USA). Theory, Des., Biomed. Appl. Solid State Chem. Sens., Workshop, Meeting Date 1977, 219-50. Editor(s): Cheung, Peter W.; Fleming, David G.; Neuman, Michael R. CRC: West Palm Beach, Fla. (English) 1978. CODEN: 39XNAM.

AB A new and fundamental technol. for the guidance, imaging, and sorting of subcellular particles and macromols. is suggested. A principal component of this technol. is the transport of charged particles (subcellular particles and macroions) by an iterative system of electrostatic quadrupole lenses. Three geometries for the beam transport system (biplanar, channeled biplanar, and cylindrical) are described for particles of 0.01 to 100-.mu.m radius. Ref. is made to appropriate **microlithog.** technologies to fabricate these elements based on similar requirements for thin film and semiconductor circuit manuf. Design criteria for particle injection guns to insure reliable particle streams to 104 bioparticles/s are described. Suggested schemes for the generation of highly charged droplet streams range from the Rayleigh jet to the Taylor cone electrospraying process. Particle/fragment detection by light fluorescence or electron scattering is described. Assuming high resoln. field emission electron microscopy, max. biol. particle velocities for STEM detection/imaging are explicitly derived. Potential applications of the cytospectrometer technol. to monomer sequencing of biol. significant **polymers** (**proteins**, DNA/RNA), to biomaterials handling automation, and to the stochastic imaging of DNA are suggested.

```
=> d query l16
L8         24907 SEA FILE=HCA ?LITHOG? OR PLANOGRAPH?
L14       686322 SEA FILE=HCA ?PROBE? OR ?PARTICLE? OR ?PARTICULATE?
L15        13169 SEA FILE=HCA L14(5A)(OLIGONUCLEOTIDE? OR POLYNUCLEOTIDE?
                 OR PROTEIN? OR (OLIGO OR POLY)(W)NUCLEOTIDE?)
L16            3 SEA FILE=HCA L8 AND L15

=> s l16 not l12
L18            0 L16 NOT L12

=> d query
L19           71 SEA FILE=MEDLINE CAPTUR?(3A)(BIND? OR BOUND? OR BOND?)
L20           92 SEA FILE=MEDLINE CAPTUR?(3A)AGENT?
L21        15870 SEA FILE=MEDLINE (POLYMER# OR COPOLYMER# OR HOMOPOLYMER#
                 OR TERPOLYMER# OR RESIN? OR GUM? OR PROBE? OR PARTICLE? O
                 R PARTICULATE? OR L19 OR L20)(5A)(OLIGONUCLEOTIDE? OR POL
                 YNUCLEOTIDE? OR PROTEIN? OR (OLIGO OR POLY)(W)NUCLEOTIDE?
                 )
L22          279 SEA FILE=MEDLINE (MICROSPHER? OR MICROCHIP? OR BIOCHIP? O
                 R MICROASSAY? OR MICROSPOT? OR MICROGLOB? OR MICRO(W)(CHI
```

P# OR ASSAY? OR SPOT# OR GLOB?))(5A)(LATEX? OR (FLUORESCE N? OR REFLECT?)(3A)DYE#)

L23 253765 SEA FILE=MEDLINE MICROSPHER? OR MICROCHIP? OR BIOCHIP? OR MICROASSAY? OR MICROSPOT? OR MICROGLOB? OR MICRO(W)(CHIP # OR ASSAY? OR SPOT# OR GLOB?) OR ASSAY? OR SUPERCHIP? OR SUPER(W)CHIP?

L24 17583 SEA FILE=MEDLINE (L23 OR MICROARRAY? OR ARRAY?)(7A)(DNA# OR PROTEIN?)

L25 817 SEA FILE=MEDLINE PHOTOLITHOG? OR TYPOLITHOG? OR LITHOG? O R LITHOPHOTOGRAV? OR PLANOGRAPH? OR AUTOLITHOG? OR CHROMO LITHOG?

L26 3 SEA FILE=MEDLINE L25 AND (L21 OR L22 OR L24)

=> d all l26 1-3

L26 ANSWER 1 OF 3 MEDLINE
AN 95130086 MEDLINE
TI Gray code masks for sequencing by hybridization.
AU Feldman W; Pevzner P
CS Department of Computer Science and Engineering, Pennsylvania State University, University Park 16802.
NC 1R01 HG00987-01 (NCHGR)
SO Genomics, (1994 Sep 1) 23 (1) 233-5.
Journal code: GEN. ISSN: 0888-7543.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 9504
AB In light-directed synthesis of high-density oligonucleotide arrays for sequencing by hybridization, synthesis errors result from the unintended illumination of chip regions that should remain dark. Most synthesis errors occur at the borders of illuminated regions, where light diffraction, internal reflection, and scattering produce the most unintended illumination. A combinatorial synthesis strategy based on two-dimensional Gray codes was devised to reduce the overall lengths of these borders in masks for **photolithographic** chip design. This article describes an application of two-dimensional Gray codes and demonstrates that masks based on this approach are optimal for minimizing the border length in VLSIPS (very large scale immobilized polymer synthesis).
CT Check Tags: Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
*Algorithms
DNA: GE, genetics
Equipment Design
*Nucleic Acid Hybridization
***Oligonucleotide Probes: CS, chemical synthesis**
Oligonucleotides: CS, chemical synthesis
Oligonucleotides: RE, radiation effects
*Photochemistry: MT, methods

*Sequence Analysis, DNA: IS, instrumentation
Subtraction Technique
RN 9007-49-2 (DNA)
CN 0 (**Oligonucleotide Probes**); 0 (Oligonucleotides)

L26 ANSWER 2 OF 3 MEDLINE
AN 95062265 MEDLINE
TI Ultra-high-speed **DNA** fragment separations using microfabricated capillary **array** electrophoresis chips.
AU Woolley A T; Mathies R A
CS Department of Chemistry, University of California, Berkeley 94720.
SO Proc Natl Acad Sci U S A, (1994 Nov 22) 91 (24) 11348-52.
Journal code: PV3. ISSN: 0027-8424.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 9502
AB Capillary electrophoresis arrays have been fabricated on planar glass substrates by **photolithographic** masking and chemical etching techniques. The **photolithographically** defined channel patterns were etched in a glass substrate, and then capillaries were formed by thermally bonding the etched substrate to a second glass slide. High-resolution electrophoretic separations of phi X174 Hae III DNA restriction fragments have been performed with these chips using a hydroxyethyl cellulose sieving matrix in the channels. DNA fragments were fluorescently labeled with dye in the running buffer and detected with a laser-excited, confocal fluorescence system. The effects of variations in the electric field, procedures for injection, and sizes of separation and injection channels (ranging from 30 to 120 microns) have been explored. By use of channels with an effective length of only 3.5 cm, separations of phi X174 Hae II DNA fragments from approximately 70 to 1000 bp are complete in only 120 sec. We have also demonstrated high-speed sizing of PCR-amplified HLA-DQ alpha alleles. This work establishes methods for high-speed, high-throughput **DNA** separations on capillary **array** electrophoresis chips.
CT Check Tags: Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.
Cellulose: AA, analogs & derivatives
*DNA: AN, analysis
*Electrophoresis: IS, instrumentation
Restriction Mapping
RN 9004-34-6 (Cellulose); 9004-62-0 (hydroxyethylcellulose); 9007-49-2 (DNA)

L26 ANSWER 3 OF 3 MEDLINE
AN 94255461 MEDLINE
TI Light-generated oligonucleotide **arrays** for rapid **DNA** sequence analysis.
AU Pease A C; Solas D; Sullivan E J; Cronin M T; Holmes C P; Fodor S P

CS Affymetrix, Santa Clara, CA 95051.
NC HG 00060 (NCHGR)
HG 00813 (NCHGR)
SO Proc Natl Acad Sci U S A, (1994 May 24) 91 (11) 5022-6.
Journal code: PV3. ISSN: 0027-8424.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 9409
AB In many areas of molecular biology there is a need to rapidly extract and analyze genetic information; however, current technologies for DNA sequence analysis are slow and labor intensive. We report here how modern **photolithographic** techniques can be used to facilitate sequence analysis by generating miniaturized arrays of densely packed **oligonucleotide probes**. These **probe arrays**, or **DNA** chips, can then be applied to parallel DNA hybridization analysis, directly yielding sequence information. In a preliminary experiment, a 1.28 x 1.28 cm array of 256 different octanucleotides was produced in 16 chemical reaction cycles, requiring 4 hr to complete. The hybridization pattern of fluorescently labeled oligonucleotide targets was then detected by epifluorescence microscopy. The fluorescence signals from complementary probes were 5-35 times stronger than those with single or double base-pair hybridization mismatches, demonstrating specificity in the identification of complementary sequences. This method should prove to be a powerful tool for rapid investigations in human genetics and diagnostics, pathogen detection, and DNA molecular recognition.
CT Check Tags: Human; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
Base Sequence
*Light
Microscopy, Fluorescence
Molecular Sequence Data
Molecular Structure
Nucleic Acid Hybridization
Oligodeoxyribonucleotides: RE, radiation effects
Oligonucleotide Probes
*Sequence Analysis, DNA: MT, methods
CN 0 (Oligodeoxyribonucleotides); 0 (**Oligonucleotide Probes**)

=> d query
L25 817 SEA FILE=MEDLINE PHOTOLITHOG? OR TYPOLITHOG? OR LITHOG? OR LITHOPHOTOGRAV? OR PLANOGRAPH? OR AUTOLITHOG? OR CHROMOLITHOG?
L27 1746 SEA FILE=MEDLINE MICROPROBE? OR MICROPARTICLE? OR MICROPARTICULATE? OR MACROPROBE? OR MACROPARTICLE? OR MACROPARTICULATE? OR BIOPARTIC?
L28 37 SEA FILE=MEDLINE L27(5A)(OLIGONUCLEOTIDE? OR POLYNUCLEOTI

```
                DE? OR PROTEIN? OR (OLIGO OR POLY)(W)NUCLEOTIDE?)
L29             0 SEA FILE=MEDLINE L28 AND L25

=> d query l38
L25           817 SEA FILE=MEDLINE PHOTOLITHOG? OR TYPOLITHOG? OR LITHOG? O
                  R LITHOPHOTOGRAV? OR PLANOGRAPH? OR AUTOLITHOG? OR CHROMO
                  LITHOG?
L30         44567 SEA FILE=MEDLINE SEQUENCE?/CT
L31         19103 SEA FILE=MEDLINE OLIGONUCLEOTIDE?/CT OR POLYNUCLEOTIDE?/C
                  T
L32        127087 SEA FILE=MEDLINE DNA/CT
L33        250165 SEA FILE=MEDLINE PROTEIN?/CT
L37         17064 SEA FILE=MEDLINE L30 AND (L31 OR L32 OR L33)
L38             2 SEA FILE=MEDLINE L37 AND L25

=> s l38 not l26
L40             0 L38 NOT L26

=> d query l39
L25           817 SEA FILE=MEDLINE PHOTOLITHOG? OR TYPOLITHOG? OR LITHOG? O
                  R LITHOPHOTOGRAV? OR PLANOGRAPH? OR AUTOLITHOG? OR CHROMO
                  LITHOG?
L30         44567 SEA FILE=MEDLINE SEQUENCE?/CT
L39             2 SEA FILE=MEDLINE L25 AND L30

=> s l39 not l26
L41             0 L39 NOT L26
```

```
=> d query
L8        24907 SEA FILE=HCA ?LITHOG? OR PLANOGRAPH?
L43         159 SEA FILE=HCA L8 AND SEQUENC?
L44          12 SEA FILE=HCA L43 AND (?MOLECUL? OR DNA# OR ?PROTEIN? OR ?
                NUCLEOTIDE?)

=> s l44 not l12
L45           9 L44 NOT L12

=> d cbib abs l45 1-9

L45  ANSWER 1 OF 9  HCA  COPYRIGHT 1995 ACS
122:232319  Same sequence between osteopontin and urinary stone
   protein.  Kohri, K.; Suzuki, Y.; Yoshida, K.; Amasaki, N.;
     Yamate, T.; Umekawa, T.; Iguchi, M.; Sinohara, H.; Kurita, T.
     (Departments Urology, Kinki University School Medicine, Osaka, 589,
     Japan).  Urolithiasis 2, [Proc. Int. Symp.], 7th, 281-3.  Editor(s):
     Ryall, Rosemary L.  Plenum: New York, N. Y. (English) 1994.  CODEN:
     60WWAG.
AB   All urinary stones contain an org. matrix which comprises approx. 2
     to 5% of the total stone wt.  The matrix may be involved in the
     pathogenesis of urinary stone formation.  Despite intensive
     investigation the role of this material in lithogenesis
     remains to be understood.  We present the results of the study of
     mol. sequencing of cDNA encoding urinary stone
   protein.  We also report the purifn. of osteopontin
   protein from urinary stone protein.  Furthermore,
     we demonstrate a marked increase in osteopontin mRNA and
   protein in renal distal tubular cells in a rat model of
     urinary stones.

L45  ANSWER 2 OF 9  HCA  COPYRIGHT 1995 ACS
122:179498  Gray code masks for sequencing by hybridization.
     Feldman, William; Pevzner, Pavel (Dep. Computer Sci. Eng.,
     Pennsylvania State Univ., University Park, PA, 16802, USA).
     Genomics, 23(1), 233-5 (English) 1994.  CODEN: GNMCEP.  ISSN:
     0888-7543.
AB   In light-directed synthesis of high-d. oligonucleotide
     arrays for sequencing by hybridization, synthesis errors
     result from the unintended illumination of chip regions that should
     remain dark.  Most synthesis errors occur at the borders of
     illuminated regions, where light diffraction, internal reflection,
     and scattering produce the most unintended illumination.  A
     combinatorial synthesis strategy based on 2-dimensional Gray codes
     was devised to reduce the overall lengths of these borders in masks
     for photolithog. chip design.  This article describes an
     application of 2-dimensional Gray codes and demonstrates that masks
     based on this approach are optimal for minimizing the border length
     in VLSIPS (very large scale immobilized polymer synthesis).

L45  ANSWER 3 OF 9  HCA  COPYRIGHT 1995 ACS
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122:39523 Tips for scanning probe microscopy produced with LIGA. Akkaraju, S.; Kelly, K.; Li, B.; Ma, E.; Meletis, E. I.; Murphy, M.; Palshin, V.; Wang, W.; Madou, M.; et al. (Mechanical Engineering Department, Louisiana State University, Baton Rouge, LA, 70803, USA). Proc. - Electrochem. Soc., 94-14(MICROSTRUCTURES AND MICROFABRICATED SYSTEMS), 188-95 (English) 1994. CODEN: PESODO. ISSN: 0161-6374.

AB A lecture with 8 refs. Unusually fine, high aspect ratio scanning probe microscope tips are needed to further improve high-resoln. mapping of all types of surfaces, possibly even allowing for direct **DNA sequencing**. Since the scanning probe tips are consumable components, development of a process to mass produce them in situ would significantly increase access to and the utility of scanning probe microscopy. We have embarked on an ambitious new manufg. scheme with bulk micromachined Si cantilevers incorporating a family of different nickel (Ni) and vitrified carbon (C) tips formed by the LIGA (from the German acronym for **Lithographie**, Galvanoformung, und Abformung = **Lithog.**, Electro-deposition and Plastic Molding) process.

L45 ANSWER 4 OF 9 HCA COPYRIGHT 1995 ACS

121:197146 Cloning and characterization of a fish centromeric satellite **DNA**. Garrido-Ramos, M.A.; Jamilena, M.; Lozano, R.; Ruiz Rejon, C.; Ruiz Rejon, M. (Fac. Cienc., Univ. Granada, Granada, Spain). Cytogenet. Cell Genet., 65(4), 233-7 (English) 1994. CODEN: CGCGBR. ISSN: 0301-0171.

AB A highly repetitive **DNA sequence** family from the genome of Sparus aurata has been cloned and characterized. The family is composed of repeat units of 186 bp in length, and it accounts for 2% of the fish genome. Data from Southern blots and in situ hybridization demonstrate that repeating units are tandemly arranged at the centromeres of all the chromosomes in this species. The repetitive **sequence** is AT rich (67%) and is characterized by short stretches of consecutive AT base pairs and by short direct and inverted repeats. **Sequence** anal. of six cloned monomers of the family reveals some variation among clones at random positions and also distinguishes two subfamilies of repeats that differ in a highly divergent block of 31 bp. These two subfamilies do not seem to be located in sep. domains but occur together in the centromere of each chromosome pair. The presence of this repeat family in the genome of other Sparidae species, some of which are relatively distant from S. aurata, indicates that this repetitive **sequence** could be an important component of the centromere in this fish family.

L45 ANSWER 5 OF 9 HCA COPYRIGHT 1995 ACS

121:129203 High-Speed Separation of Antisense **Oligonucleotides** on a Micromachined Capillary Electrophoresis Device. Effenhauser, Carlo S.; Paulus, Aran; Manz, Andreas; Widmer, H. Michael (Corporate Analytical Research, Ciba Ltd., Basel, CH-4002, Switz.). Anal. Chem., 66(18), 2949-53 (English) 1994. CODEN: ANCHAM. ISSN:

0003-2700. OTHER SOURCES: CJACS-IMAGE; CJACS.

AB A micromachined chem. anal. device based on capillary gel electrophoresis has been successfully used for very fast size sepn. of a synthetic mixt. of fluorescent phosphorothioate **oligonucleotides** ranging from 10 to 25 bases in length. The device consists of a channel system which has been formed in the surface of a glass plate by a std. **photolithog.** process. An integrated vol.-defined sample injector allowed for unbiased electrokinetic introduction of sample plugs of 150-.mu.m length (corresponding sample vol., 90 pL) into the sepn. channel. This well-defined injection procedure, in combination with the application of high elec. fields of up to 2300 V/cm, resulted in size sepn. of single-stranded **oligonucleotides** in <45 s when a sepn. distance of 3.8 cm was used. Column efficiencies of up to 200,000 theor. plates with an assocd. plate height of 0.2 .mu.m were obtained. Fast repetitive sample injection and anal. could be demonstrated with excellent reproducibilities for both migration time (<0.06%) and peak height (<1.7%). The results might also be of relevance for **DNA sequencing**, where fast **oligonucleotide** anal. is of key importance. Moreover, they provide a route to "online" anal. of synthetic and natural **oligonucleotides** and possibly other classes of biopolymers.

L45 ANSWER 6 OF 9 HCA COPYRIGHT 1995 ACS

117:121322 The nature and degree of substitution patterns in novolaks by carbon-13 NMR spectroscopy. Khadim, Mohammad A.; Rahman, M. Dalil; Durham, Dana L. (Coventry Tech. Cent., Hoechst Celanese Corp., Coventry, RI, 02816, USA). Proc. SPIE-Int. Soc. Opt. Eng., 1672(Adv. Resist Technol. Process. IX), 347-59 (English) 1992. CODEN: PSISDG. ISSN: 0277-786X.

AB Exptl. conditions are described under which the protonated carbons in novolak resins may be quant. detd. using a DEPT (distortionless enhanced via polarization transfer) pulse **sequence**. A term, the unsubstitution index is defined which indicates the carbon positions which have participated in chain propagation during the polymn. This unsubstitution index is related to **lithog.** performance of mixed meta and para cresol polymers.

L45 ANSWER 7 OF 9 HCA COPYRIGHT 1995 ACS

116:187312 Method and device for moving **molecules** by the application of a plurality of electrical fields. Soane, David S.; Soane, Zoya M. (Soane Technologies, Inc., USA). PCT Int. Appl. WO 9112904 A1 910905, 28 pp. DESIGNATED STATES: W: AU, CA, JP; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 91-US1307 910228. PRIORITY: US 90-487021 900228.

AB Electrophoresis and **photolithog.** are applied to integrate technol. innovations in the fields of biochem., polymer science, mol. genetics and electronics. Charged mols. or particles are moved in a medium by the simultaneous or sequential applications of a plurality of elec. fields and devices. Devices and methods are

disclosed for moving charged mols. through a medium by the application of a plurality of elec. fields of sufficient strength and applied for sufficient amts. of time so as to move the charged mols. through the medium. Mixts. of charged mols. are pulled through the gel by the force of the elec. fields. The fields are preferably activated simultaneously or sequentially one after another at various speeds to create complex force field distributions or moving field waves along the sepn. medium. Charged mols. capable of moving quickly through the gel will be moved along by the faster moving field waves and be sepd. from slower moving mols. The fields can be activated by slower moving mols. The fields can be activated by computer software and can be used to move mols. away from and toward each other to obtain rapid and complex chem. synthesis, **sequencing** or reaction protocols.

L45 ANSWER 8 OF 9 HCA COPYRIGHT 1995 ACS
101:219628 Electron beam **lithography** - influence of **molecular** characteristics on the performance of positive resists. Sharma, Varinder K.; Affrossman, Stanley; Pethrick, Richard A. (Dep. Pure Appl. Chem., Univ. Strathclyde, Glasgow, G1 1XL, UK). Br. Polym. J., 16(2), 73-6 (English) 1984. CODEN: BPOJAB. ISSN: 0007-1641.

AB The theor. modeling of the electron beam **lithog**. process and the establishment of criteria which need to be satisfied for a polymer to behave as a good pos. resist are discussed. The effects of mol. wt., tacticity, solvent selection, and **sequence** structure are considered. Criteria are presented upon which the design of a new resist material may be based.

L45 ANSWER 9 OF 9 HCA COPYRIGHT 1995 ACS
101:88309 Cyclic **nucleotides** and **glycoproteins** during formation of cholesterol gallstones in prairie dogs. Zak, R. A.; Frenkiel, P. G.; Marks, J. W.; Bonorris, G. G.; Allen, A.; Schoenfield, L. J. (Cedars-Sinai Med. Cent., UCLA, Los Angeles, CA, 90048, USA). Gastroenterology, 87(2), 263-9 (English) 1984. CODEN: GASTAB. ISSN: 0016-5085.

AB Male prairie dogs received in std. diets either 0.08% cholesterol (control), or 1.2% cholesterol (**lithogenic**). Animals were killed at days 2-4, 7, 10, 21, and 39 to det. the temporal **sequence** of changes in mucosal cAMP in the gallbladder and of cholesterol satn., **glycoproteins**, cholesterol crystals, and gallstones in bile of prairie dogs fed the **lithogenic** diet. **Glycoprotein** concn. in bile in the **lithogenic** group was elevated compared to controls on all days of death. Satn. of bile and formation of cholesterol crystals occurred only in the **lithogenic** group, detected first after 7 days of feeding. Gallstones were found in the **lithogenic** group only. Elevation of cAMP in the mucosa of gallbladders was found in the **lithogenic** group only, beginning at day 10. Thus, increased **glycoproteins** in bile preceded cholesterol satn. and crystn. which, in turn, preceded

increased mucosal cAMP.